[From Fabricius d'Acquapendente: Opere Chirurgiche. Padova, 1684.]

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SURGERY AT THE NEW YORK HOSPITAL ONE HUNDRED YEARS AGO

By EUGENE H. POOL, M.D., AND FRANK J. McGOWAN, M.D.

NEW YORK

ON June 13, 1771, a royal charter was granted to "The Society of the Hospital in the City of New York, in America." This was the first hospital in the colony of New York, and the second in America, the Pennsylvania Hospital in Philadelphia having been founded in 1751 through the efforts of Benjamin Franklin.

The Society bought five acres of land on Broadway and Pearl Street and here imposing buildings were erected. As a result of the occupancy of New York by the British and the use of the buildings as barracks, they were not used for the treatment of patients until 1791. The medical staff then became a medical faculty, and organized for clinical lectures and general instruction of students. The medical students of King's College had these privileges from the beginning, but students from other medical schools and even unattached students were not debarred.

The group of hospital buildings contained about 500 beds for patients and continued in active use until 1870 when a new hospital building was built on the present site.

The first attending physician was Samuel Bard (elected physician in 1774); Thomas Jones was the first attending surgeon (1792).

Among other well-known men who were "attendings" in the early days were Wright Post (surgeon, 1792), Richard S. Kissam (surgeon, 1792), David Hosack (physician, 1797), Valentine Mott (surgeon, 1817), Thomas Cock (physician 1819), and John C. Cheesman (surgeon, 1821). The history of the early period of the New

York Hospital is given by E. W. Sheldon in his Historical Address, October 26, 1921. We are indebted to this author for the historical data.

A note book ("Surgical Register") covering the period from 1808 to 1833 has recently been found. It is well preserved, beautifully written and the cases are very carefully and thoroughly presented. The contents are so interesting and at times so amusing as to warrant comment.

The full title is "Surgical Register: Surgical cases selected from among the patients in the wards of the New York Hospital according to the Third Section of the Ninth Chapter of the By-laws and Regulations of the Hospital." By this rule the House Surgeons were required to keep full records of selected and unusual cases. As a result we now have a wealth of detailed information in regard to the practice of surgery 100 years ago.

The professional work was controlled by a number of rules formulated by the Board of Governors. Among these was one that no operation should be undertaken except after consultation by all the physicians and surgeons. We find evidence in the note book that this rule was scrupulously observed, and we can picture from the notes how often these grand old pioneers of American medicine sat around the consulting table and learnedly discussed the problems of the surgical service. The table around which they sat still exists, with their name plates attached.

Throughout the case reports one is impressed by the admirable clinical descriptions. We have ample testimony that the men of that time used to the utmost their five senses, having no accessories in the struggle with disease. Scientific medicine was unknown, there was no science of bacteriology with its concepts of inflammation and asepsis, no instruments of precision. Therapy was purely empirical.

It must be remembered that there were few aids to diagnosis; no thermometer[1] nor stethoscope[2] nor auscultation; no nurses to assist in treatment. Most important was the lack of anesthesia.[3] Yet extensive operations of election were often successfully undertaken. Among these there are included in the notes operations for aneurysm, excisions of tumors including cancer, plastic operations and amputations.

Judged by our standards medical knowledge was woefully restricted and surgery amazingly limited 100 years ago. Yet the actors themselves viewed their situation just as we view our own today. Thus, Pott[4] wrote in 1777:

> No man, however slightly acquainted with the history of Surgery, can have the smallest doubt of the superiority which its present state justly claims over that of our predecessors . . . The surgery of the last century was coarse and cruel, painful and tedious. To simplify the art has been the aim of all the best practitioners of later times.

In justice, it must be said that one finds views and practices on certain subjects which are peculiarly advanced for the period. For instance, it is the general impression that intestinal surgery was inaugurated later than the middle of the last century, yet we find as early as 1824 the statement by Gibson[5] that "cases undoubtedly occur, though very rarely, in which it may become necessary to stitch a wounded bowel." Also that[6] "from experiments . . . upon inferior animals, it has been ascertained that the ligature, when placed upon a wound of the intestine, finds its way through the coats of the gut and is discharged by stool." So animal experimentation is not of too recent date.

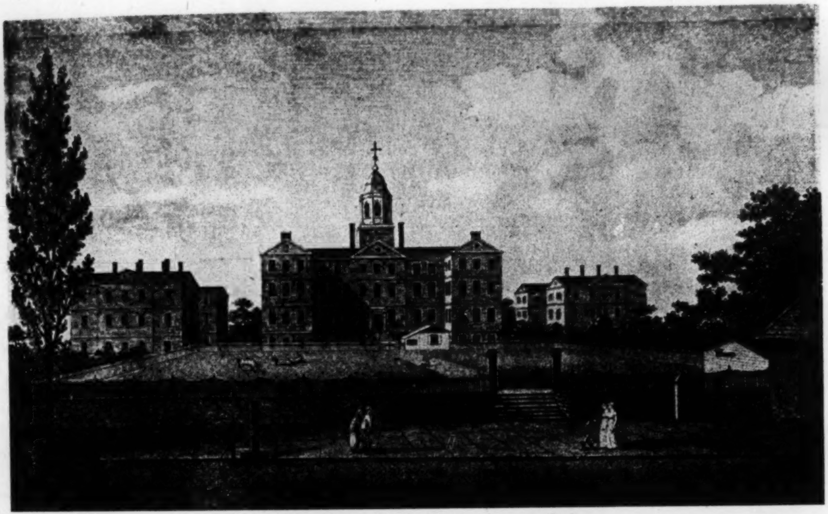


FIG. 1. THE NEW YORK HOSPITAL IN 1808.

The cancer problem presented a peculiar similarity to that which exists today, and some of the reports might well have been issued by the Society for the Control of Cancer.

Abernethy[7] attempted a classification of tumors as the result of his extensive observations at St. Bartholomew's Hospital. To quote him, one of his motives was because "the minds of medical men having of late been laudably excited to investigate the nature of cancer . . . the society for the investigation of cancer have enquired about the anatomical structure of that disease and about other disorders which have a resemblance to it."

Gibson[8] writes: "Notwithstanding the numerous treatises on cancer within the last twenty years, and the great encouragement held out by societies for investigating its nature and treatment, we are now almost as much in the dark concerning the disease as at any former period."

Cancer of the breast was recognized, and in 1824 Gibson states:

> In the early stages of schirrous breast, or when the tumor is solitary, free from pain, not attached by adhesions to the surrounding parts, and the axillary glands uncontaminated, there is every prospect of success from an operation skillfully performed. The entire removal of the breast, however, in such a case will seldom be necessary . . . but the surgeon should make it a rule to go beyond the immediate limits of the tumor . . . [9]

Cancer of the tongue[10] was treated by the ligature method: "A common crooked threaded needle was passed through the tongue behind the tumor. The double thread was separated and tied on each side of the tumor. A sharp pain follows the tightening of the ligatures. In 4–5 days the tumor sloughs away." Cancer of the lip was excised.[11]

Samuel Cooper[12] (1815) notes that:

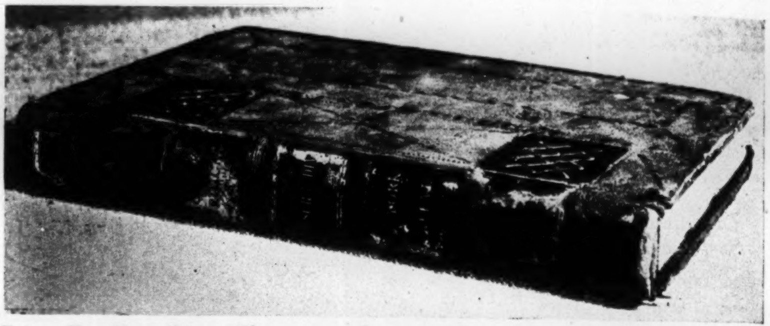


Fig. 2. The Note Book, "Register of Surgical Cases," New York Hospital, 1808–1833.

> The operation itself may prove an exciting cause of carcinoma, and will certainly be so if the scirrhous part be not completely removed. The portion left behind will inevitably become cancerous. The chance of success depends on the entire extirpation of the disease; and in no operation is celerity more dangerous. Above all things a free removal of the skin covering and adjoining the situation of the tumor is to be recommended. Even when the disease has been most completely cut out, together with a large portion of the surrounding substance, the wound sometimes changes into a cancerous ulcer; and every prudent surgeon, therefore, always ensures his own reputation by making a guarded prognosis.

It is surprising to find that our modern appreciation of the importance of postmortem examinations is not new. We plume ourselves on an advanced scientific attitude and regard with pride the attainment of a large percentage of autopsies.

Yet, over 100 years ago, these notes of 125 cases show that efforts were always made to obtain an examination after death. In many cases permission was obtained and then a satisfactory statement of the findings is given.

Cases from the note book will be presented here. They are selected to illustrate the types of surgical cases of the period. They are given exactly as they appear in the book.

Case Eighty-two

Laceration of Liver—Autopsy

John Hawkins, born New London, aged 20 years was admitted in the New York Hospital, June 23, 1820, in consequence of an injury received from a carriage passing over his abdomen just above the umbilicus. He had been bled before he came in the house, his pulse at his admission was weak and irregular, his belly swollen, tense and very painful. Had an enema administered which brought away about two quarts of coagulated blood. Nine o'clock P.M. he was seized with rigors and vomiting of blood. Ten o'clock his pulse became full and frequent, he was bled twelve ounces and evaporating lotions applied to his abdomen. He complained of pain in his head for which it was shaved and cooling lotions applied. June 24th, pain in the abdomen very violent, attended with a sense of weight and bearing down. Tension and tumor increased. He was bled about eight ounces and fainted . . . June 26th, countenance of eye quite yellow and a yellow hue all over his whole body. His urine yellow . . . June

30th, he continues to do very well but his abdomen swells and sallowness increases. July 1st, complains of great pain in the abdomen with great sense of weight and bearing down; pulse quick and hard, bowels open. H. Venesectio 4 ounces and he fainted in about a half hour. His pulse rose again, palpitation and pain increased, he took a large anodyne by which he was greatly relieved. July 2nd, 7 o'clock A.M. he feels quite easy, slept well, pulse rather quick, complains still of palpitation. Belly swollen and tense, he was ordered Ol. Camphor to be rubbed over his abdomen. At 4 o'clock P.M. he was seized with a sense of suffocation and great anxiety. Pulse scarcely perceptible. Syncope and hiccough. Vol. Alkali with other stimulants were administered. His eyes were fixed and at 6 o'clock he died.

Appearances after Dissection

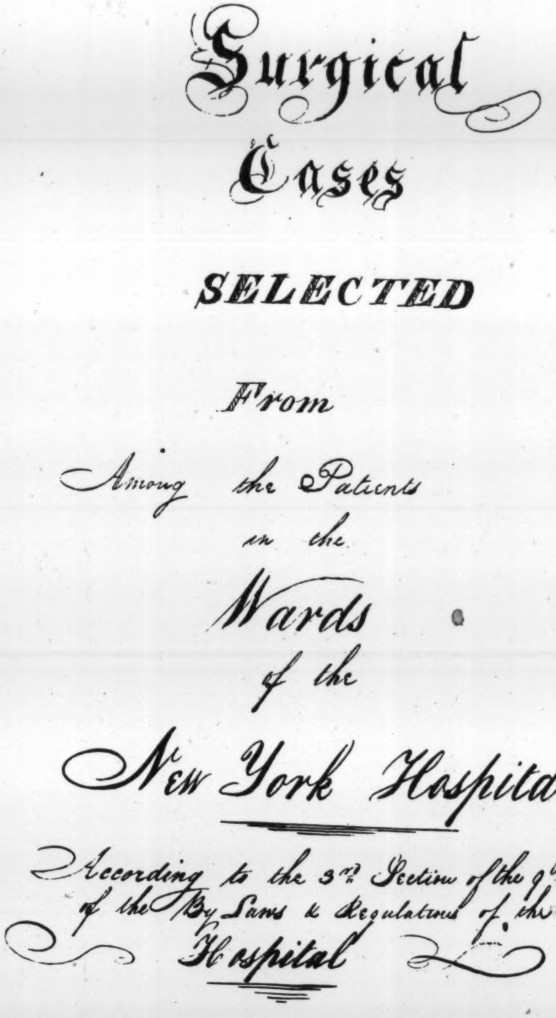
Upon dividing the integuments and muscles of the abdomen and opening into the cavity there appeared a large collection of coagulated blood lying anterior to the omentum betwixt it and the peritoneum covering all the intestines. It was of a very dark color and tinged with bile. The omentum was very highly inflamed and adhering to the intestines. The intestines very much inflamed and in some parts gangrenous. There were about three gallons of coagulated blood effused. The stomach, spleen and bladder were perfectly natural. The right kidney appeared a little inflamed. Upon examining the liver there was found on the convex surface a laceration of the shape of the letter T, about four inches in length. Upon the concave surface there was a laceration large enough to admit a couple of fingers communicating with the upper laceration. The gall bladder appeared natural but containing a very small quantity of bile.

Case Eighty-seven

Jefferson, a Negro, age, 35, of an athletic form was on the 5th of July, 1824 engaged in a fray at New London, being at the time in a state of intoxication. Thus circumstanced he was knocked down and his belly jumped upon by one or two men. He was taken up insensible and brandy poured down his throat until he revived which was about two hours after the accident. At which time he noticed that his belly was swollen and continued to increase in distension until his body looked more like a hogshead than a human trunk. On arriving in New York he died and on examination the bladder was found perforated, it having been ruptured.

FIG. 3. THE NOTE BOOK, "REGISTER OF SURGICAL CASES," NEW YORK HOSPITAL, 1808–1833.

Symptoms. Pulse small, feeble, frequent, toward the latter part intermitting. Skin hot and dry; tongue yellow, bowels costive. Retention of urine and urinous fetor.



Surgical
Cases
SELECTED
From
Among the Patients
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Wards
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New York Hospital
According to the 3rd Section of the 9th Ch.
of the By Laws & Regulations of the
Hospital

FIG. 4. TITLE PAGE OF REGISTER.

TETANUS

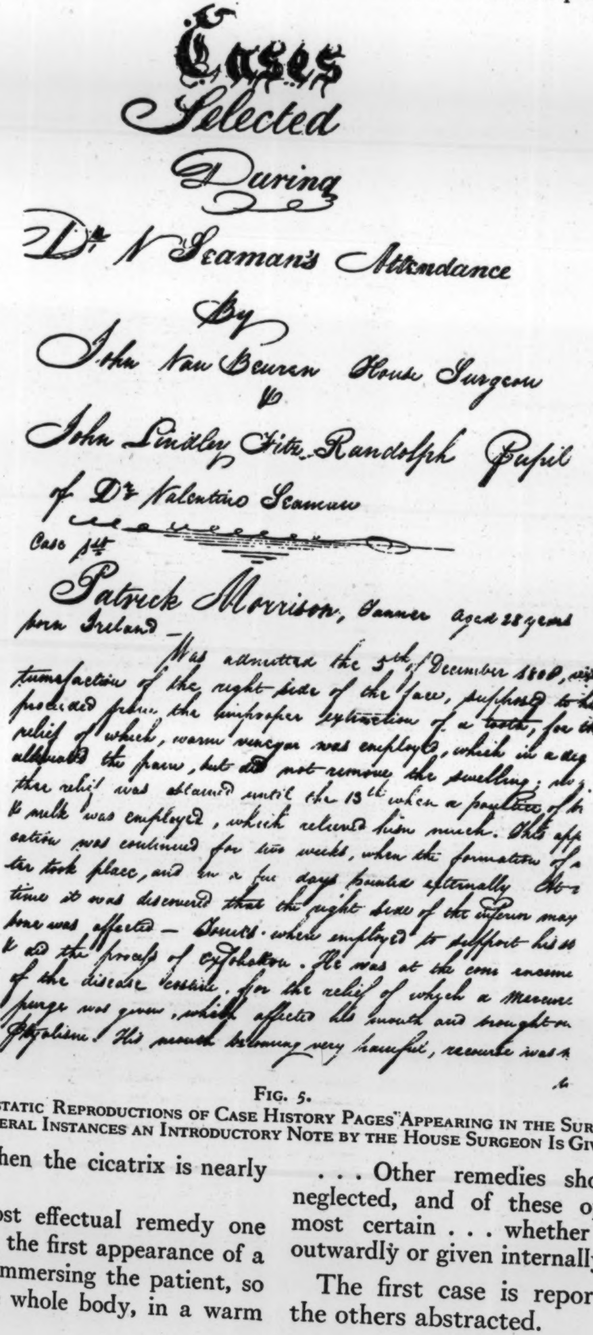
There were five cases of tetanus complicating injuries. It is of interest to review the case histories and note the progress and therapy applied.

Regarding tetanus Bell[13] writes:

> Tetanus and locked jaw sometimes proceed from them [wounds], particularly in warm climates. Occasionally, indeed, these symptoms originate from other causes, the nature of which we cannot always discover . . . Even the slightest scratch, not penetrating to a greater depth than the skin, has been known to induce them . . . These symptoms seldom occur in large wounds till the cure

is far advanced; and in some instances, particularly after the amputation of limbs, they are never more apt to

bath . . . Water is commonly used for this purpose; but where milk can be procured, it should be preferred.



Cases
Selected
During
Dr N Seaman's Attendance
By
John Van Beuren House Surgeon
&
John Lindley Fitz-Randolph Pupil
of Dr Valentine Seaman

Case 1st
Patrick Morrison, Tanner aged 28 years
from Ireland —
Was admitted the 5th of December 1808, with
tumefaction of the right side of the face, supposed to have
proceeded from the improper extraction of a tooth, for the
relief of which, warm vinegar was employed, which in a deg
alleviated the pain, but did not remove the swelling; no g
ther relief was obtained until the 13th when a poultice of br
& milk was employed, which relieved him much. This app
cation was continued for two weeks, when the formation of a
ter took place, and in a few days healed externally. Abo
time it was discovered that the right side of the inferior max
bone was affected — Bougies were employed to support his so
& aid the process of Exfoliation. He was at the commenceme
of the disease costive, for the relief of which a Mercuri
purge was given, which affected his mouth and brought on
Ptyalism. His mouth becoming very painful, recourse was h

FIG. 5.

FIGS. 5–12. PHOTOSTATIC REPRODUCTIONS OF CASE HISTORY PAGES APPEARING IN THE SURGICAL REGISTER. IN SEVERAL INSTANCES AN INTRODUCTORY NOTE BY THE HOUSE SURGEON IS GIVEN.

appear than when the cicatrix is nearly completed.

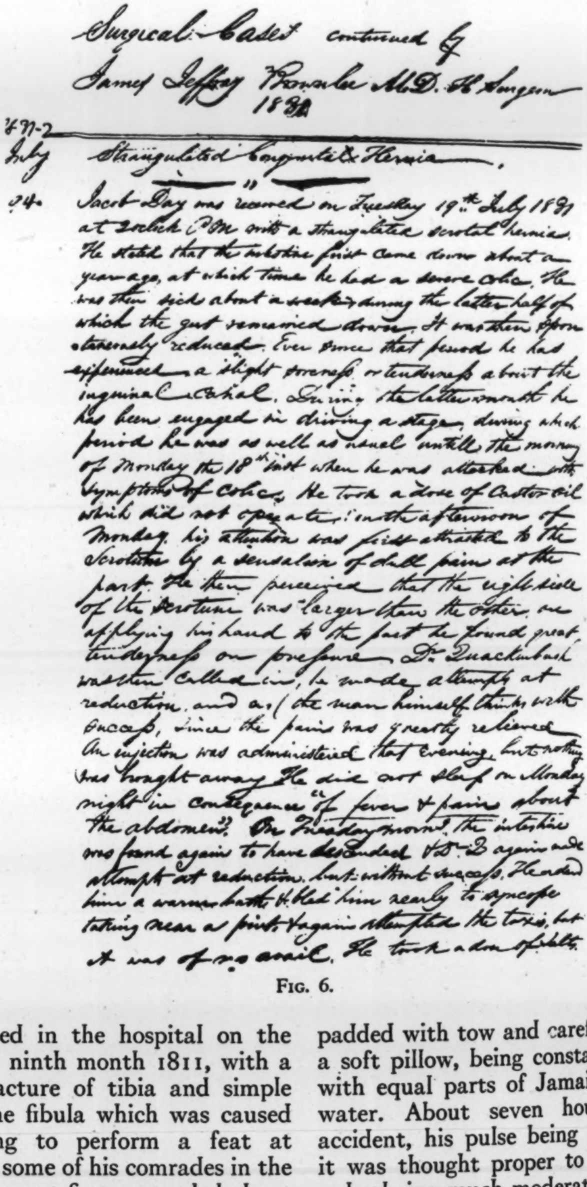
. . . The most effectual remedy one can employ, on the first appearance of a locked jaw, is immersing the patient, so as to cover the whole body, in a warm

. . . Other remedies should not be neglected, and of these opium is the most certain . . . whether it is used outwardly or given internally.

The first case is reported in full, the others abstracted.

Case Twenty-seven

William Haswell, born New York, aged 24 years. Comedian.



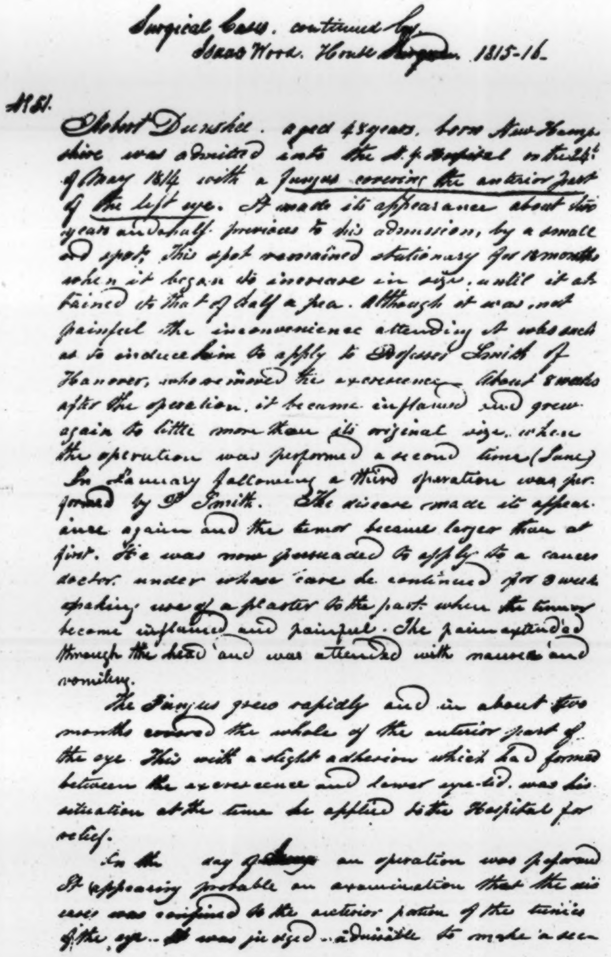
Surgical Cases continued by
James Jeffray Brownlee M.D. H. Surgeon
1831

471-2
July Strangulated Congenital Hernia.

24. Jacob Day was received on Tuesday 19th July 1831
at 2 o'clock P.M. with a strangulated scrotal hernia.
He stated that the intestine first came down about a
year ago, at which time he had a severe colic. He
was then sick about a week, during the latter half of
which the gut remained down. It was then spon-
taneously reduced. Ever since that period he has
experienced a slight soreness or tenderness about the
inguinal canal. During the latter month he
has been engaged in driving a stage, during which
period he was as well as usual untill the morning
of Monday the 18th inst when he was attacked with
symptoms of colic. He took a dose of Castor oil
which did not operate: in the afternoon of
Monday his attention was first attracted to the
Scrotum by a sensation of dull pain at the
part. He then perceived that the right side
of the Scrotum was larger than the other, on
applying his hand to the part he found great
tenderness on pressure. Dr. Quackenbush
was then called in, he made attempts at
reduction, and as (the man himself thinks) with
success, since the pain was greatly relieved.
An injection was administered that evening, but nothing
was brought away. He did not sleep on Monday
night in consequence "of fever & pains about
the abdomen". On Tuesday morning the intestine
was found again to have descended & Dr. Q again made
attempts at reduction, but without success. He ordered
him a warm bath & bled him nearly to syncope
taking near a pint, & again attempted the taxis, but
it was of no avail. He took a dose of salts.

FIG. 6.

Was received in the hospital on the eighteenth of ninth month 1811, with a compound fracture of tibia and simple fracture of the fibula which was caused by attempting to perform a feat at jumping with some of his comrades in the circus. The bone at first protruded about 1½ inches but was reduced by making extension; the limb was then laid in a flexed position, the leg being bent upon the thigh and the thigh upon the trunk; it was then placed upon a leg splint well padded with tow and carefully laid upon a soft pillow, being constantly kept wet with equal parts of Jamaica spirits and water. About seven hours after the accident, his pulse being full and hard, it was thought proper to let blood, his pulse being much moderated by the loss of about twelve ounces and LXXX gtts. of laudanum which allayed the pain he before felt and enabled him to sleep. From this time until the 23rd no particular symptoms arose except the its application. A thin, sanious matter began to discharge from its surface and the parts contiguous put on a fiery red



Surgical Cases. continued by
Isaac Wood. House Surgeon. 1815-16.

No 81.

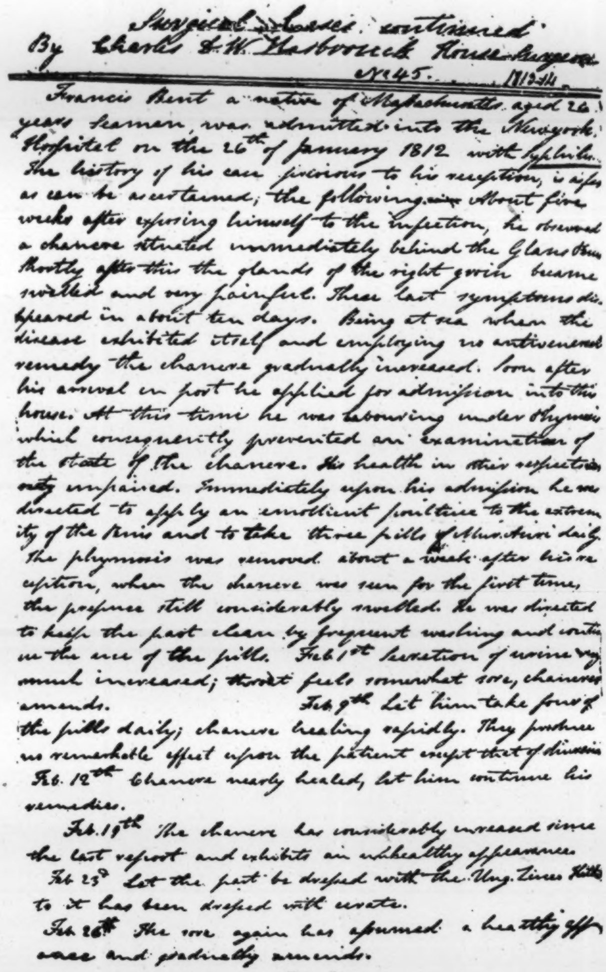
Robert Dunshee. aged 48 years. born New Hamp-
shire was admitted into the N.Y. Hospital on the 24th
of May 1814 with a fungus covering the anterior part
of the left eye. It made its appearance about two
years and a half previous to his admission, by a small
red spot; this spot remained stationary for 12 months
when it began to increase in size. until it at-
tained to that of half a pea. Although it was not
painful the inconvenience attending it was such
as to induce him to apply to Professor Smith of
Hanover, who removed the excrescence. About 8 weeks
after the operation. it became inflamed and grew
again to little more than its original size. when
the operation was performed a second time (June)
In January following a third operation was per-
formed by Dr Smith. The disease made its appear-
ance again and the tumor became larger than at
first. He was now persuaded to apply to a cancer
doctor. under whose care he continued for 3 weeks
making use of a plaster to the part. when the tumor
became inflamed and painful. The pain extended
through the head and was attended with nausea and
vomiting.

The fungus grew rapidly and in about two
months covered the whole of the anterior part of
the eye. This with a slight adhesion which had formed
between the excrescence and lower eye-lid. was his
situation at the time he applied to the Hospital for
relief.

On the day of ~~[illegible]~~ an operation was performed
It appearing probable on examination that the dis-
ease was confined to the anterior portion of the tunics
of the eye. It was judged admissible to make a sec-

FIG. 7.

wounded part looking unusually dry. Poultices of bread and milk were applied but they did not induce suppuration. The lacerated part now putting on a gangrenous appearance, the yeast poultice was had recourse to but the ulcer not looking better after it had been for a day or two applied, bark was united with it but no striking effect was induced from appearance. 20th, the inflammation has in measure subsided but the ulcer still does not suppurate kindly; complains of shooting pain in the calf of the leg affected. 27th, he has experienced a drawing pain, as he expresses it, from the injured part to the knee and now and then a twitching sensation. 28th, this morning finds a slight difficulty in opening his mouth which he imputes to cold; pain in his leg increases both in frequency and violence and takes laudanum to allay it. 30th, muscles of the jaw rather more rigid than the preceding day; has them rubbed with Lin. Vol. and a flannel bandage applied around them. Tenth month, first; the contraction in the calf of the leg still continues to increase and jaws become more rigid, being nearly closed; complains of great debility and loss of appetite. At a consultation it was requested that he should take gtts. xx of the Tinct. Cantharides every two hours until an effect should be produced on the neck of the bladder, which was produced after the administration of LXXX gtts; it was then discontinued until the irritation had nearly subsided; and in this way it was several times repeated with as much wine as he could drink and laudanum to allay his pain, but without any alleviation of prominent symptoms of the complaint. 2nd, slept very little last



Surgical Cases continued

By Charles D. W. Hasbrouck House Surgeon

No 45. 1812-14.

Francis Bent a native of Massachusetts aged 26 years seamen, was admitted into the Newyork Hospital on the 26th of January 1812 with Syphilis. The history of his case previous to his reception, is as far as can be ascertained, the following. ~~viz~~ About five weeks after exposing himself to the infection, he observed a chancre situated immediately behind the Glans Penis shortly after this the glands of the right groin became swelled and very painful. These last symptoms disappeared in about ten days. Being at sea when the disease exhibited itself and employing no antivenereal remedy the chancre gradually increased. Soon after his arrival in port he applied for admission into this house. At this time he was labouring under Phymosis which consequently prevented an examination of the state of the chancre. His health in other respects only impaired. Immediately upon his admission he was directed to apply an emollient poultice to the extremity of the Penis and to take three pills of Mur. Auri daily. The phymosis was removed about a week after his reception, when the chancre was seen for the first time, the prepuce still considerably swelled. He was directed to keep the part clean by frequent washing and continue the use of the pills. Feb. 1st Secretion of urine very much increased; throat feels somewhat sore, chancre amends. Feb. 9th Let him take four of the pills daily; chancre healing rapidly. They produce no remarkable effect upon the patient except that of diuresis. Feb. 12th Chancre nearly healed, let him continue his remedies.

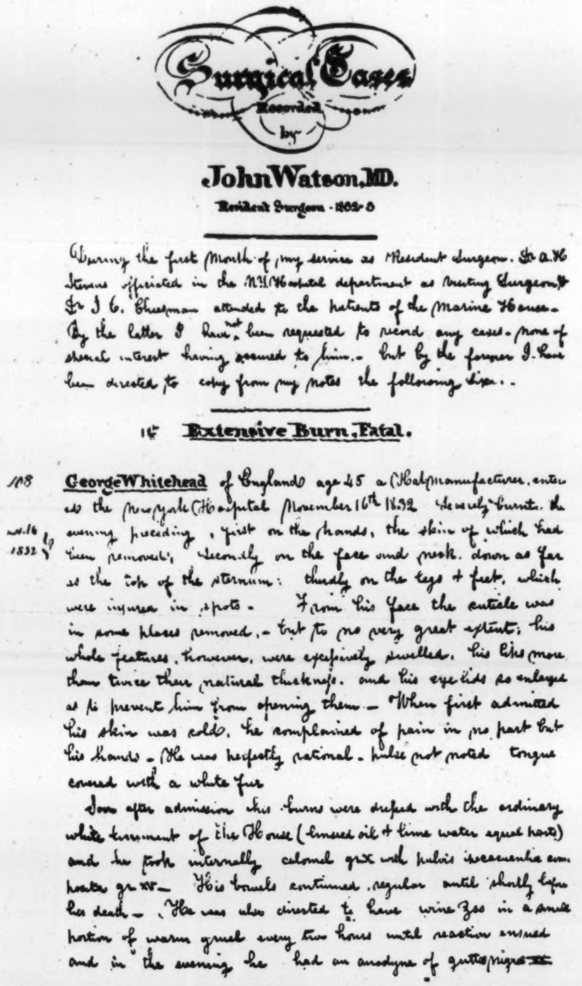
Feb. 19th The chancre has considerably increased since the last report and exhibits an unhealthy appearance.

Feb 23d Let the part be dressed with the Ung. Zinci. Hitherto it has been dressed with cerate.

Feb. 26th The sore again has assumed a healthy appearance and gradually amends.

FIG. 8.

night. Complains of excruciating distress when the spasms attack him. Muscles of the thigh are now also affected; he has likewise slight attacks of opisthotonos and at times is troubled with a difficulty of swallowing. Debility increases rapidly. 3rd, spent the last night in very great distress, the spasms being much more violent than at any former period. Liquids when taken into the mouth are forcibly ejected. 11 o'clock all the symptoms are astonishingly aggravated particularly that of opisthotonos. 1 o'clock, was attacked with universal spasms accompanied with increased action of the arterial system, the heart appearing to act spasmodically, the respiration being very difficult, the eyes staring and plainly evincing a loss of sense; in this state he lay between five and ten minutes and died.



Surgical Cases
Recorded
by
John Watson, MD.
Resident Surgeon · 1832-3

During the first Month of my service as Resident Surgeon. Dr A. H. Stevens officiated in the N.Y. Hospital department as Visiting Surgeon & Dr J. C. Cheesman attended to the patients of the Marine House. By the latter I have not been requested to record any cases— none of special interest having seemed to him.— but by the former I have been directed to copy from my notes the following six..

1st **Extensive Burn, Fatal.**

108 **George Whitehead** of England age 45 a Hatmanufacturer. enter'd the New York Hospital November 16th 1832 Severely burnt. the evening preceding, first on the hands, the skin of which had been removed; secondly on the face and neck. down as far as the top of the sternum: thirdly on the legs & feet. which were injured in spots. From his face the cuticle was in some places removed,— but to no very great extent; his whole features, however, were excessively swelled. his lips more than twice their natural thickness. and his eye lids so enlarged as to prevent him from opening them.— When first admitted his skin was cold. he complained of pain in no part but his hands.— He was perfectly rational. pulse not noted tongue covered with a white fur

Nov. 16 1832

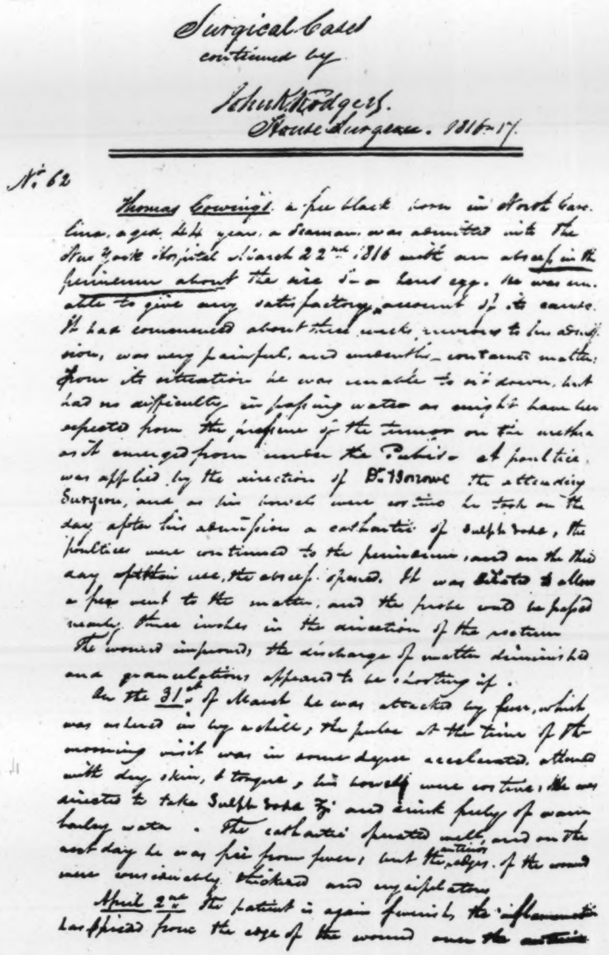
Soon after admission his burns were dressed with the ordinary white liniment of the House (linseed oil & lime water equal parts) and he took internally calomel gr. x with pulvis ipecacuanhae comp. gr. xv— His bowels continued regular until shortly before his death.— He was also directed to have wine ℥ss in a small portion of warm gruel every two hours until reaction ensued and in the evening he had an anodyne of guttae nigrae xx

FIG. 9.

Case Twenty-nine—Male 35

Admitted July 9, 1811, with a tetanic

affection originating as was supposed from an open wound of the foot received three weeks previously. He was given thirty drops of laudanum every hour with as much wine as he could take without affecting his head and a blister applied to the back of his neck. Dr. Seaman then ordered a pill composed of gr. v Calomel; gr. II Camphor and gr. I Opium with the addition of four blisters to be applied to his thighs and arms. Three days later the above pills disagreeing with his stomach he was put upon the Tr. Opium and Spts. of Camphor in the proportion of 40 drops of the former and 30 drops of the latter. Two days later these were increased to 60 drops each, the symptoms at this time being inconsiderably alleviated, but despite medicines died in convulsions.



Surgical Cases
continued by
John K. Rodgers.
House Surgeon. 1816-17.

No. 62

Thomas Cowing[?]. a free black born in North Carolina, aged 44 years, a Seaman, was admitted into the New York Hospital March 22nd 1816 with an abscess in the perineum about the size of a hens egg. He was unable to give any satisfactory account of its cause. It had commenced about three weeks previous to his admission, was very painful, and evidently contained matter; From its situation he was unable to sit down, but had no difficulty in passing water as might have been expected from the pressure of the tumor on the urethra as it emerged from under the Pubis. A poultice was applied by the direction of Dr. Borrowe the attending Surgeon, and as his bowels were costive he took on the day after his admission a cathartic of Sulph. Soda, the poultices were continued to the perineum, and on the third day of their use, the abscess opened. It was dilated to allow a free vent to the matter, and the probe could be passed nearly three inches in the direction of the rectum. The wound improved, the discharge of matter diminished and granulations appeared to be shooting up.

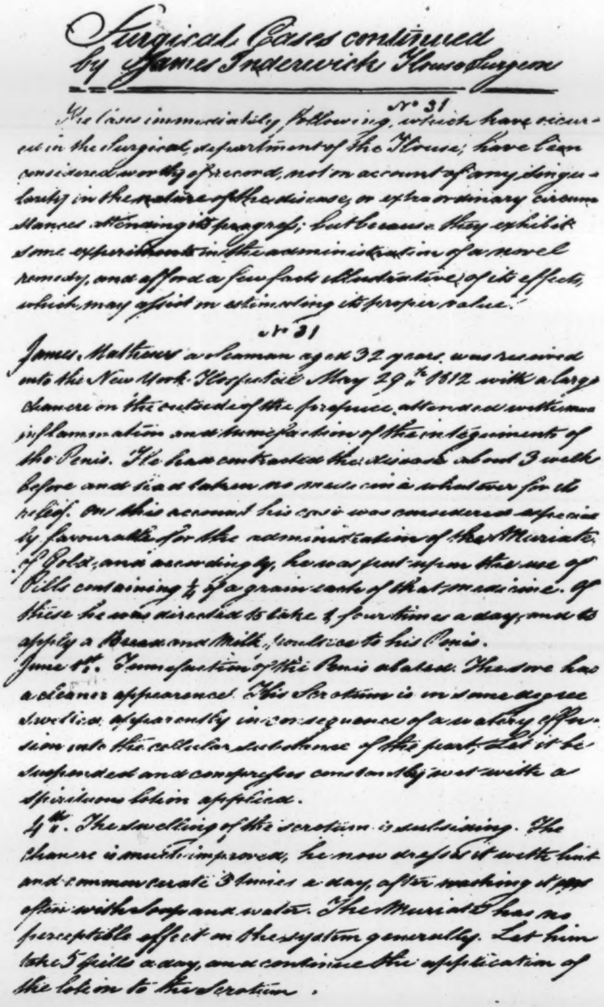
On the 31st of March he was attacked by fever, which was ushered in by a chill; the pulse at the time of the morning visit was in some degree accelerated, attended with dry skin, & tongue; his bowels were costive; He was directed to take Sulph. Soda ℥i and drink freely of warm barley water. The cathartic operated well, and on the next day he was free from fever, but the anterior edges of the wound were considerably thickened and erysipelatous.

April 2nd The patient is again feverish, the inflammation has spread from the edge of the wound over the ~~anterior~~

FIG. 10.

Case Thirty—Male 30

Admitted July 8, 1811 with a chronic leg ulcer and an intermittent fever of the quotidian type. One week before admission he felt unusual pain in the diseased leg. He then experienced considerable pain in his back and breast causing his head to be thrown back repeatedly and likewise a difficulty of respiration with nearly a perfect inability to open his mouth.



Surgical Cases continued
by James Inderwick House Surgeon

No 31

The Cases immediately following, which have occured in the Surgical department of the House; have been considered worthy of record, not on account of any singularity in the nature of the disease, or extraordinary circumstances attending its progress; but because they exhibit some experiments in the administration of a novel remedy, and afford a few facts illustrative of its effects, which may assist in estimating its proper value.

No 31

James Mathews a Seaman aged 32 years, was received into the New York Hospital May 29th 1812 with a large chancre on the outside of the prepuce, attended with some inflammation and tumefaction of the integuments of the Penis. He had contracted the disease about 3 weeks before and had taken no medicine whatever for its relief. On this account his case was considered especially favourable for the administration of the Muriate of Gold, and accordingly, he was put upon the use of Pills containing ¼ of a grain each of that medicine. Of these he was directed to take 1 four times a day, and to apply a Bread and Milk poultice to his Penis.

June 1st. Tumefaction of the Penis abated. The sore has a cleaner appearance. His Scrotum is in some degree swelled apparently in consequence of a watery effusion into the cellular substance of the part; Let it be suspended and compresses constantly wet with a spirituous lotion applied.

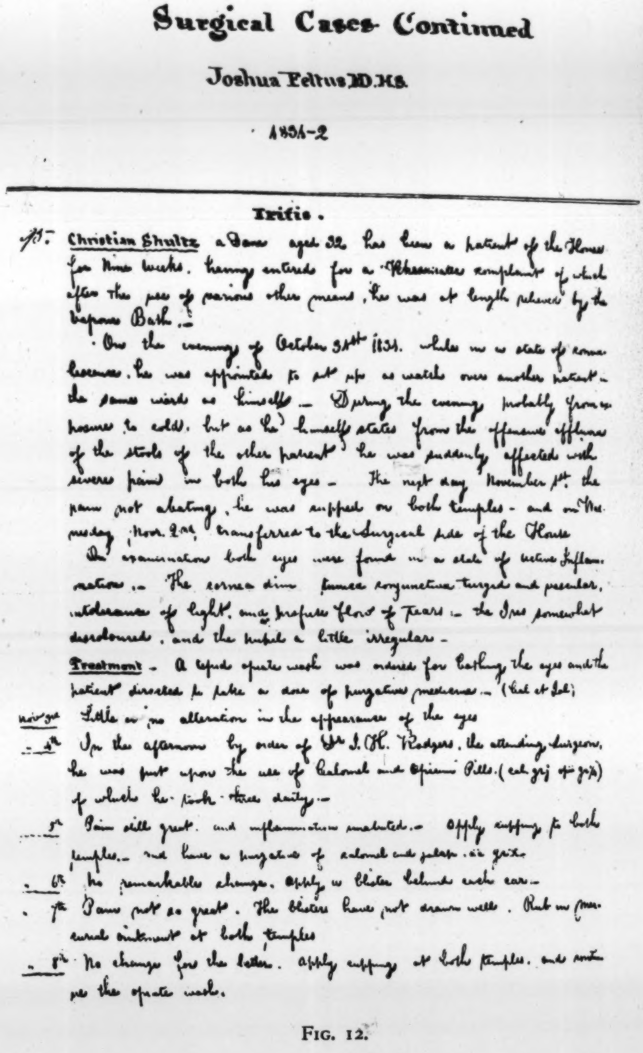
4th. The swelling of the scrotum is subsiding. The chancre is much improved, he now dresses it with lint and common cerate 3 times a day, after washing it [illegible] often with soap and water. The Muriate has no perceptible effect on the system generally. Let him take 5 pills a day, and continue the application of the lotion to the Scrotum.

FIG. 11.

He was put upon the use of Bark, Wine and Laudanum which soon caused the quotidian to disappear and his strength to improve. Blisters were applied to each side of the inferior jaw and on the back of the neck and were kept discharging by the Savine Cerate. These remedies were continued for six days when the disease remitting in violence, it was found necessary to diminish the quantity of medicine as his head began to feel the effects of the wine. Recovery.

Case Forty-seven—Male 45

Admitted July 22, 1813 with severe compound fracture of leg with crushing of tarsus. Intense inflammation ensued and amputation was witheld because of this. Two weeks later he was seized with symptoms of tetanus which gradually increased notwithstanding the repeated and free exhibition of Opium. The jaws were so closely locked as scarcely to admit the introduction of his two fingers. Three days later, finding that these symptoms would not yield to all the usual remedies in such cases and that there was no probability of saving the limb, it was deemed proper to amputate.



Surgical Cases Continued

Joshua Feltus M.HS.

1831-2

Iritis.

18. Christian Shultz a Dane aged 32 has been a patient of the House for nine weeks. having entered for a Rheumatic complaint of which after the use of various other means, he was at length relieved by the Vapour Bath.—

On the evening of October 31st 1831. while in a state of convalescence. he was appointed to sit up as watch over another patient in the same ward as himself.— During the evening probably from exposure to cold. but as he himself states from the offensive effluvia of the stools of the other patient he was suddenly affected with severe pain in both his eyes— The next day November 1st. the pain not abating. he was cupped on both temples— and on Wednesday, Nov. 2nd transferred to the Surgical side of the House

On examination both eyes were found in a state of active Inflammation.— The cornea dim tunica conjunctiva turgid and vascular, intolerance of light. and profuse flow of tears— the Iris somewhat discoloured. and the pupil a little irregular—

Treatment— A tepid opiate wash was ordered for bathing the eyes and the patient directed to take a dose of purgative medicine.— (Sal et Sal)

Nov 3rd Little or no alteration in the appearance of the eyes

— 4th In the afternoon by order of Dr I. H. Rodgers. the attending Surgeon, he was put upon the use of Calomel and Opium Pills. (cal gr j op gr ss) of which he took three daily.—

— 5th Pain still great. and inflammation unabated.— Apply cupping to both temples.— and have a purgative of calomel and jalap. āā gr x.

— 6th No remarkable change. Apply a blister behind each ear.—

— 7th Pain not so great. The blisters have not drawn well. Rub in mercurial ointment at both temples

— 8th No change for the better. Apply cupping at both temples. and continue the opiate wash.

FIG. 12.

Amputation[14] performed by Dr. Kissam and the symptoms of tetanus soon after ceased. Recovery.

did not take as much as was intended. A blister was applied to his throat from ear to ear. Amputation was proposed but patient postponed decision. The next day, after a sleepless night, pulse was full. He had taken his medicine until about two hours since; on account of the extreme pain attending every attempt at deglutition he was unwilling to swallow anything. The convulsions are now more frequent and extend to the abdominal muscles and extensors of the back. Death.

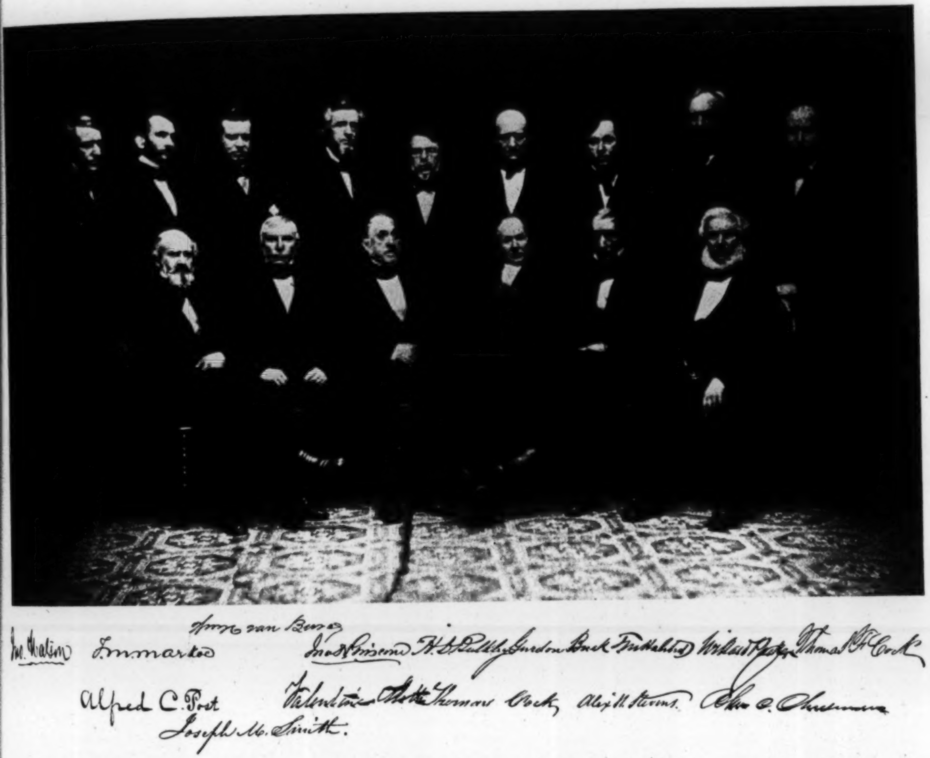


FIG. 13. PORTRAITS OF NINETEENTH CENTURY PHYSICIANS AND SURGEONS ATTACHED TO NEW YORK HOSPITAL (1860).

Case Sixty-three—Male 40

Admitted Thursday, April 11, 1817 with trismus. He stated that on Saturday night immediately preceding he had been wounded in the first joint of the right thumb and that on the evening before admission he had observed some stiffness of his jaws and that on the day of admission this symptom was considerably increased, attended occasionally with convulsive action of the muscles of the posterior part of the neck and sternomastoid. He was immediately ordered Tinct. Opii drops 60 every hour and as much wine as he could drink. On account of the difficulty attending deglutition he

One can see from these cases that tetanus was a well-recognized clinical entity (as it has been since the time of Hippocrates) and called for the exhibition of opium, wine and heroic local counterirritation.

Some very unusual cases, as rattlesnake bite and lightning stroke, are described:

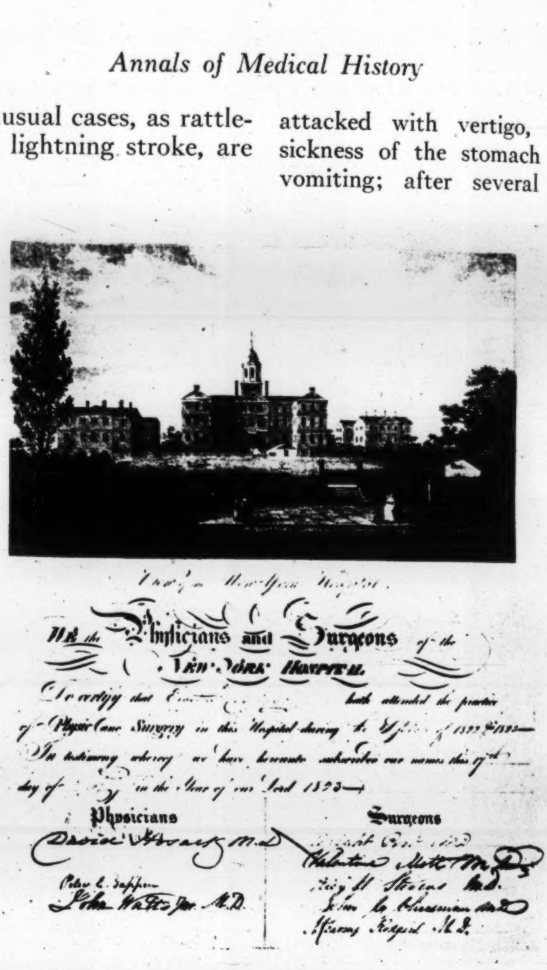

New York Hospital.
We the Physicians and Surgeons of the New York Hospital
Physicians
Surgeons
David Hosack M.D.
John Watts Jun. M.D.
Valentine Mott M.D.
John C. Cheesman M.D.
J. Kearny Rodgers M.D.

FIG. 14. DIPLOMA OF THE NEW YORK HOSPITAL WITH SIGNATURES OF DAVID HOSACK, WRIGHT, POST, VALENTINE MOTT, ALEX. H. STEVENS, JOHN C. CHEESMAN AND J. KEARNEY RODGERS.

Rattlesnake Bite

Case Forty-one

John Millet, born New Orleans, aged 30. Weaver.

Was admitted in the institution September 3rd, 1812 on account of a poison wound near the first joint of the forefinger of the right hand. On the evening of the first while carrying a rattlesnake in a box to the museum he, through negligence, afforded the animal an opportunity to bite him in that part. About an hour and a half after the accident the hand and arm swelled and became excessively painful; he was soon attacked with vertigo, headache and sickness of the stomach amounting to vomiting; after several severe rigors violent febrile action ensued. Immediately on the occurrence of the above mentioned symptoms he sent for a physician who prescribed a dose of Sulph. Sodae which was rejected by the stomach, and he left him some sudorific powders from which he says he experienced considerable relief.

The next day the tumefaction of the arm was much increased and extended to the breast, a loss of sensibility and coldness were also observed by his attendants in the lower extremities. He now applied for assistance to an Indian doctor who laid open the wound by an incision and applied to it salt and tobacco, gave him a nostrum in form of pills and directed him to bathe his arm frequently in a solution of salt and vinegar. At the time of his reception his arm was tumid, hot and painful when touched. The wound was about one inch in length and attended with a continual oozing of arterial blood. He complained of pain in the breast but remarked that the pain in his head and nausea which were before urgent had now subsided. His pulse was quick and frequent, bowels costive, urine high-colored, and on various parts of his body and more particularly on the extremities petechiae of a dark purple color were not unsparingly scattered. His whole appearance expressed debility, but the actual depression was not as great as some of the symptoms seemed to indicate. At the suggestion of Dr. Post a quantity of the narrow leafed Plantain (Plantago Lanceolata Lin.) was immediately obtained. The contused leaves were applied as a cataplasm to the wound and to the arm, he was also directed to take a tablespoonful of the expressed juice every hour. September 4th, the patient has passed a restless night with the frequent occurrence of subsultus tendinum which appears to have subsided in the morning. Pulse frequent and quick with some tension. Skin hot. Complains of pain in the breast. Has had no evacuation from his bowels since the first inst. Rx Pulv. Rhei ½ dram, Sub. M. Hyd. grains 6.

Let him continue the use of the Plantain juice internally and have the cataplasm renewed three times a day. 5th, heat of skin diminished. Pulse frequent but without tension. He was refreshed with some sleep last night and was very little troubled with the subsultus. It has given place to a constant trembling of the limbs. Appetite improves. The swelling begins to diminish at the upper part of the arm. Continue the use of the Plantain and let him have a half pint of wine daily. 6th, tumefaction of the arm diminishing. The oozing from the wound has stopped. He has had a spontaneous hemorrhage from the nose. Pulse and skin natural. Bowels regular. Seems to amend generally. Cont. Med. 7th, slept well last night. Swelling still subsiding. There is an appearance of ecchymosis about the wrist of the affected arm. Skin and pulse natural. 8th, the arm has nearly diminished to its natural size. The hand and fingers are still hard and tumid. The petechiae are gradually disappearing. All the constitutional symptoms have subsided except slight

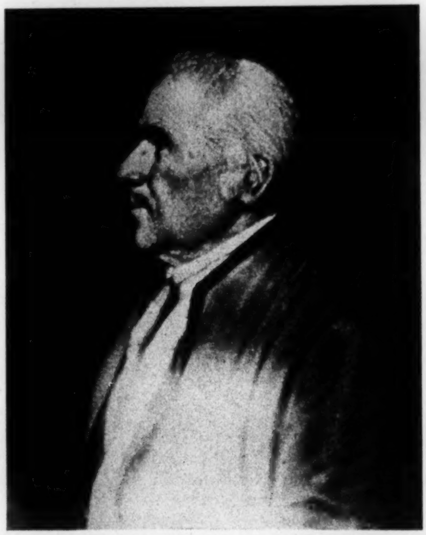


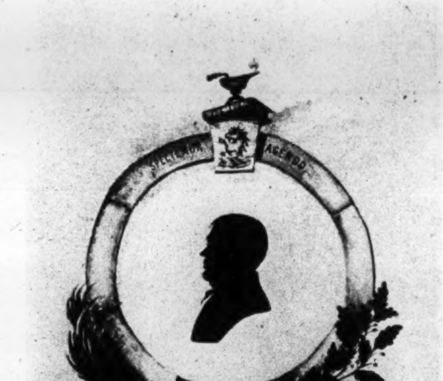
FIG. 15. SAMUEL BARD, M.D., ATTENDING PHYSICIAN 1774–1797. (FROM A PASTEL BY SHARPLES IN THE POSSESSION OF HIS GREAT-GRAND-NEPHEW, JOHN CALLENDER LIVINGSTON.)

Samuel Bard, the son of Dr. John and Susanne (Valleau) Bard, was born in Philadelphia, April 1, 1742. On the side of both parents he was of French descent.

He prosecuted the study of medicine under the auspices of his father, Dr. John Bard, and attended lectures in London and Edinburgh. Returning to New York about 1765, he commenced practice with his father. In 1766 he married his cousin, Mary Bard. In 1768 he was instrumental in founding, in connection with Columbia (then known as King's) College, the first Medical School in this city, himself occupying the chair of Theory and Practice. In 1813, when a separation took place between Columbia College and its Medical School, upon the remodelling of the latter, Dr. Bard became the President of the College of Physicians and Surgeons, which position he held until the date of his death, May 24, 1821.

It is chiefly through the exertions of this distinguished physician and philanthropist that the New York Hospital was founded. Dr. Bard was the first Attending Physician and was elected in 1774. He resigned in 1797.

occasional tremor and spasms in the extremities. Let him continue the use of the Plantain and have a pint of wine[15] daily. 9th, no swelling now remains except on the back of the hand which is also considerably hard and sometimes hot and painful. Pulse somewhat excited. Complains of headache. H. Pulv. Rhei et Calom. Omit the wine today. September 11th, amends. Let him resume the use of the wine and continue the Plantain. 14th, petechiae have disappeared entirely. The swelling on the back of the hand continues hard and obstinate. He complains of a universal itching of the skin which deprives him of his accustomed rest at night. For this he was directed to use the warm bath and to lave the skin with a solution of Mur. Sodae several times a day. 18th, he was directed to bathe the tumid part with aqua ammonia previous to each application of the cataplasm. 23rd, swelling slowly decreases. He can now use his fingers with greater facility. Contin. Med. 29th, swelling has almost disappeared. Some stiffness remains in the forefinger. The use of the Plantain was now discontinued. The Aq. Ammonia was yet employed. October 5th, discharge cured.


VALENTINE SEAMAN M.D.

Dr. V. Seaman Attending Surgn

FIG. 16. VALENTINE SEAMAN, M.D., ATTENDING SURGEON, 1796–1817.

Valentine Seaman, the son of Willett and Martha (Valentine) Seaman, was born at North Hempstead, Long Island, April 2, 1770. He received the elements of ordinary education and commenced his medical studies under Dr. Nicholas Romeyn. In 1791 he attended lectures at the University of Pennsylvania and in due course was given the degree of M.D. In early life, Dr. Seaman married the daughter of John Ferris of Westchester. He was a kinsman and preceptor of Valentine Mott.

Dr. Seaman was the first to introduce in this city, in 1799, vaccination for kine- or cow-pox, shortly after the success of Dr. Jenner in 1798. He also took a lively interest in contesting the non-contagion of yellow fever, contending it was not contagious in a pure and wholesome atmosphere, but he met with great opposition both from the Faculty and public authorities. Twice in the course of his practice he contracted the disease.

In the early part of the nineteenth century, he was the first to analyze the waters of Saratoga and Ballston Springs, which analysis stands unchallenged to this day. In 1798 he organized in the New York Hospital the first regular School for Trained Nurses.

Dr. Seaman was appointed Attending Surgeon to this Hospital in 1796 and served in that capacity until his death in 1817.

Lightning Stroke

Case Sixty-eight[16]

I. Stones, was brought in the New York Hospital April 29, 1818 having been struck with lightning a week previous on board of the Captain Fanning of New London. It appeared that he grasped a rope with his left hand which he was drawing down; his left foot was probably raised from the deck at the same time. The electric fluid in descending the rope had passed diagonally across his body from the left hand to the right foot, involving in its passage the intermediate viscera and a considerable breadth of the external integuments. A reflected operation had also involved the left side of the neck and head. The whole surface of the affected skin was blistered as if with hot water, and numerous points were scattered over it resembling punctures with a fork or nail. The poor fellow exhibited no signs of life for several hours after the stroke.

Nothing had been done for him when he was brought to the hospital. His skin was heated and dry, his breathing laborious, his pulse strong and frequent and his tongue white and dry. Pupils were considerably dilated. Under these circumstances there could be no doubt of the propriety of bleeding and the antiphlogistic treatment which was accordingly pursued vigorously notwithstanding the typhoid head of skin, dilated pupils, occasional delirium and great nervous agitation. The amount of blood drawn within ten days was about 120 ounces, it constantly exhibited the buffy coat. The vesicated parts were covered with the ordinary lime water liniment. His recovery, a long time doubtful, was at length completed at the expiration of seven weeks. Except a degree of weakness in the right knee, his health was perfectly re-established.[16]

Cataracts were successfully operated upon, eyes were enucleated for tumor formation and extensive and successful plastic operations were performed by the general surgeons. The following unusual ophthalmic case, because of the clarity of the clinical description, merits inclusion:

Case One Hundred and Two

Spontaneous Dislocation of the Crystalline Lens.

Benjamin Wilcox, a sailor, came into the New York Hospital May 20, 1832 for the above singular and unusual disease. On examining his eyes there appeared a peculiar tremulousness of the irides which attracted the attention. The cornea of the left eye was much clouded, though the iris and pupil were discernible. In the anterior chamber was discovered an opaque, regularly formed body resembling the lens with its capsule which on further examination proved to be the case. The following is the history the patient gives of his case:

While on a whaling voyage in 1822 he received an injury in the left eye with a rope which caused for some time much uneasiness with considerable impediment to his sight. A second blow was received

FIG. 17. DAVID HOSACK, M.D., ATTENDING PHYSICIAN, 1797–1806.

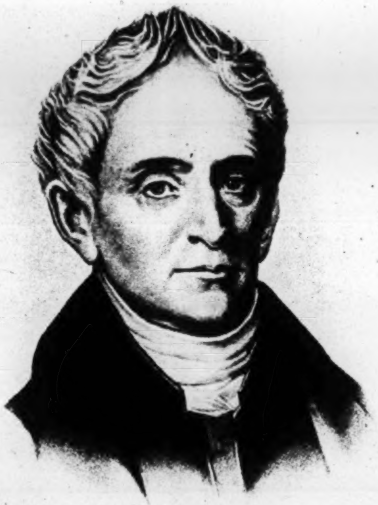
David Hosack, the son of Alexander and Jane (Arden) Hosack, was born in the city of New York, August 31, 1769. In 1786, he entered the Freshman class of Columbia College, remaining, however, only until the half of the Junior year. In May, 1788, he became a private pupil of Dr. Richard Bayley, but being desirous of finishing his collegiate course, he entered the Senior class of Princeton College from which institution he graduated in 1789. He was a young student at the time of the "Doctors' Mob."

Returning to New York, he resumed his medical studies, attending the lectures of Drs. Wright Post, Bard, and others, and in 1790 removed to Philadelphia to secure the advantages of medical instruction which that city afforded. The degree of M.D. was conferred upon him by the University of Pennsylvania. In 1792, he went to Europe and spent some time in London and Edinburgh.

In 1794, he returned to New York and began his professional career. In 1795, he was appointed Professor of Botany in Columbia College, and about this time became a partner of Dr. Bard. In 1797, he received the appointment of Professor of Materia Medica. These joint Professorships he held until 1807, when, upon the formation of the College of Physicians and Surgeons of the State of New York, he was chosen Professor of Surgery and Midwifery. During this time he was probably the best-known, the most popular, the most accomplished, and the most useful physician in New York. He was a teacher and a promoter of good medical schools; he was an admirable writer and a courageous and untiring medical reformer.

In 1797, he was appointed one of the attending physicians of the New York Hospital; resigned in 1806; was reappointed in 1807; and having again resigned in 1825; was then elected Consulting Physician, which position he filled until his death, December 22, 1835.

some time later in the same eye from one of the crew, which was succeeded by inflammation. This subsided and left his vision much impaired. With a view of gaining relief he left his vessel for one year. This was unattended with any amendment. He again went to sea, still his sight remaining unimproved, till from a gradual decay of sight he was forced to return home. This is all he can say as to the probable cause of this difficulty which still needs much light. In looking at the eye, as was before observed, the cornea is seen opaque, though still sufficiently transparent to observe the tremulous iris and the regular opaque body in the anterior chamber which is undoubtedly the lens and its capsule, which at one time is seen in the anterior chamber while at another is imperceptible. This fact was not at first discovered. I have, however, seen it disappear on directing the patient to thrust his head back. This strange circumstance excited the attention of the attending surgeons (as well it might) as also of many students who were from time to time visiting the hospital. At night time his vision is best and even better without any light—so also when the lens is in the posterior chamber he sees far better than when it is in the anterior. His account of his sensations is strange. He speaks of seeing globes of fire, etc. and when the moon is vertical he describes it as just rising above the horizon. His appreciation of distance is also so false that while walking through the ward of the hospital and seeing a lamp suspended nine feet above his head, he invariably stooped to avoid it and declared it seemed to him only three feet. This case excited much interest as well for its novelty as a desire to some ultimate relief. Dr. Mott proposed that an incision should be made through to the anterior chamber and that the capsule be lacerated with a view of promoting the absorption of the lens. The operation was not performed and



Dock. Wright Post Attending Surg.

FIG. 18. WRIGHT POST, M.D., ATTENDING SURGEON 1792–1821.

Wright Post was born at North Hempstead, Queens County, Long Island, February 19, 1766. He was the son of Jotham Post, and his mother was the daughter of Benjamin Wright.

He began the study of medicine with Dr. Richard Bayley, whose daughter he married in 1791. At the age of eighteen he set sail for Europe, there to prosecute his studies under more favorable conditions.

Upon his return in 1786, he began to practice in New York, and in 1787 delivered lectures on Anatomy at the New York Hospital. In 1792, he was appointed Professor of Surgery in the Medical Department of Columbia College, and then visited the great schools of Europe, collecting a splendid anatomical cabinet, and returned to New York in 1793, after which he held the Chair of Anatomy until 1813. He was unrivalled as an anatomist, a most beautiful dissector and a widely known teacher.

In 1813, on the union of the Medical Faculty of Columbia and that of the College of Physicians and Surgeons, Dr. Post was appointed Professor of Anatomy and Physiology in the new faculty of which he was President in 1821–1826. He was the first in America to ligate the femoral artery successfully, (for popliteal aneurism), according to John Hunter's method (1796) and the second to ligate the external iliac successfully (1814), having been preceded by Dorsey in 1811. Post was also the first surgeon to tie the primitive carotid in its continuity with success (1813), an operation which he successfully repeated in 1816, and the subclavian artery was first successfully ligated outside the scaleni by him in 1817.

He was appointed Attending Surgeon to the New York Hospital in 1792, serving until 1821, when he resigned and was appointed Consulting Surgeon, which position he held until his death June 14, 1828.

the patient discharged without further relief.

As an example of a plastic operation on the face we report in full:

Case One Hundred and Five

Rufus Woollard, a farmer, aged 23, entered April 30, 1832.

Last November, subsequent to the extraction of the second of the lower bicuspid teeth of the left side, the patient was attacked with inflammation of the jaw. The whole of the left cheek continued much swelled and painful for about a month, when a slough formed and left a large chasm on the side of the face extending from the angle of the mouth back toward the left ear. The physician attending him now extracted several of the other teeth from the affected side of the lower jaw and trimmed the rough edges of the unnatural opening with a scalpel. The edges then turning in adhered to the gums, thus leaving the cavity of the mouth exposed and distorting the patient's visage in a most disagreeable manner. He arrived in the city from North Carolina in March. Shortly after his arrival Dr. Mott removed the whole of the alveolar process of the left side of the lower jaw; the bone he found denuded and carious. In a fortnight afterward the gum had granulated and covered the body of the bone. And now to remove the deformity caused by the chasm in the cheek, Dr. Mott turned up a portion of the integument of the neck and thus filled the opening. For adapting the edges of the cavity to the new integument they were trimmed off and their adhesion with the gum separated. In preparing the flap of skin a posterior incision was carried down from an inch below the lobe of the ear nearly to the Pomum Adami. The anterior incision was begun about ¾ of an inch before the upper of the other and carried downwards and forwards along the posterior edge of the chasm nearly as far as the lower part of the other incision. These two were united by a third, thus forming a quadrilateral flap but attached to the cheek at its upper side. This piece of skin was now turned forwards so that its base became its anterior side, and thus it was adapted to the opening in the cheek which it completely filled. The edges were drawn together by interrupted sutures and in a few days the whole seam with the exception of a small part at the angle of the mouth (where some stitches had ulcerated through) was perfectly united. The gaping at the angle of the mouth was, however, unfortunate as it not only disfigured the patient but also allowed the saliva to flow through it. On the third June, Dr. Mott again pared away the edges of the gap and brought the surfaces together by suture. The stitches again ulcerated through before the adhesive process was completed. In the meantime, the sore left in the neck by the removal of the flap of integument granulated kindly. Dr. Mott's term of attendance expiring and Dr. Rodgers, succeeding, took charge of the patient who on the twenty-third July again pared away the edges of the triangular gap and brought the sides together by suture and adhesive straps. In a week after, the edges of the wound were united and the ligatures removed. Owing to the frequent paring away of the orbicularis the mouth was somewhat smaller than natural yet the symmetry of the face is restored.

In a case (case one hundred and twenty-five) of severe burn of the face. The house surgeon remarks:

An operation was performed for the ectropion of the left eyelid, by turning a flap of integument from the back part of the cheek. Immediately after the operation the eyelid was in its natural position, but by the time the wounds made had firmly cicatrized, the deformity (ectropion) was nearly as great as before —Dr. Rodgers operator.

Anesthesia had not been discovered at this time and operations were fearful ordeals for the unfortunate patient Opium,[17] in large amounts, was administered but suffering under the knife was extreme. Turning our attention to this phase of surgical work we quote:

Case Sixty-six

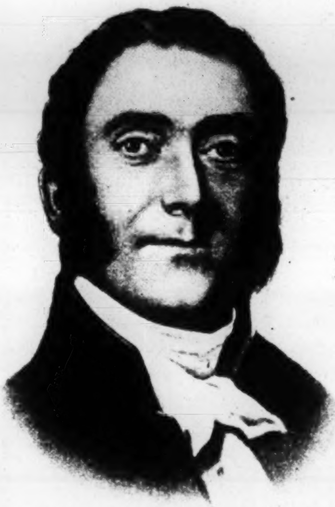
Female 32—Aneurysm of Right Carotid Artery (Dissection of vessel and proximal ligation) . . . On the morning of the operation she appeared perfectly tranquil, her pulse was 73, and her composure at this time could not be equalled by the fortitude which she evinced while under the knife . . .

Case Ninety-two

Male 23—Disease of Knee Joint—Amputation . . . The sensibility of the nerves much impaired by his long continued disease, the man seeming to suffer comparatively little during the operation—a circumstance which is generally considered rather unfavorable . . .

Case One Hundred and Twenty-three

Male 23—Disease of the Tibia of the Right Leg . . . It was determined at the consultation of the surgeons to trephine the tibia at its center and remove the piece of dead bone which was supposed to be enclosed within a newly formed cover. A crucial incision was made over the part and the skin dissected off from the bone so as to give sufficient space for the application of the trephine. A



September 16th 1819
Valentine Mott. M. D.
Att'nd. Surgeon

FIG. 19. VALENTINE MOTT, M.D., ATTENDING SURGEON, 1817–1837.

Valentine Mott, the son of Dr. Henry and Jane (Way) Mott, was born at Glen Cove, Oyster Bay, Long Island, August 20, 1785. After finishing his studies at Columbia College, he entered upon the study of medicine in the office of Dr. Valentine Seaman. In 1806, he visited Europe and prosecuted his studies in the hospitals of London and Edinburgh.

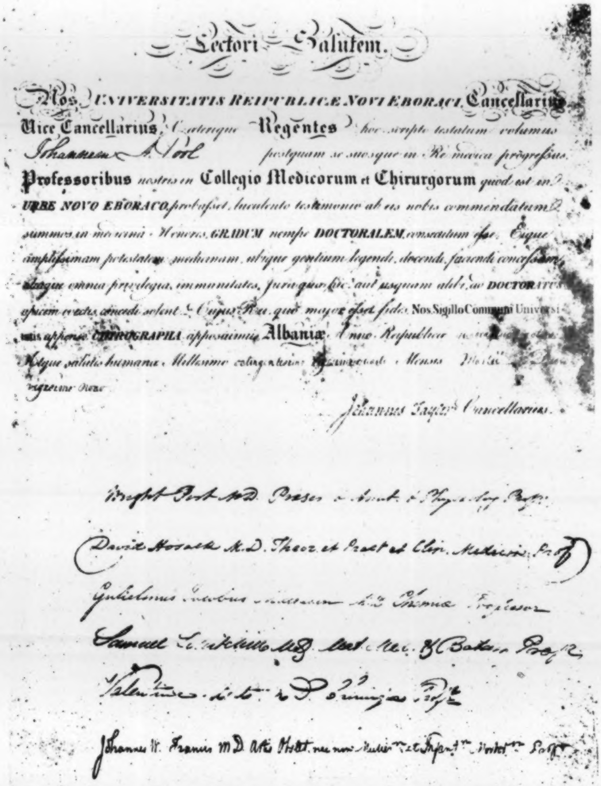
On his return to New York, at the early age of twenty-four, he was elected to the Chair of Surgery in Columbia College, remaining there until 1813. Subsequently he occupied the chair of Surgery in the College of Physicians and Surgeons.

In 1826, he, with Drs. Hosack, Mitchill, Francis, and others, founded Rutgers Medical College; but when this institution ceased to exist, he again returned to the College of Physicians and Surgeons. Upon the establishment of the Medical Department of the University of the City of New York in 1840, he was unanimously elected Professor of Surgery and President of the Medical Faculty, and retained these positions until 1850, when he resigned and went abroad.

In 1817, Dr. Mott was elected Attending Surgeon of the New York Hospital, in which institution he performed some of his most brilliant operations. He was, like his teacher Astley Cooper, a pioneer in vascular surgery. The innominate artery was ligated for the first time in the history of surgery by Mott in 1818, the first successful operation being that of Smyth of New Orleans, in 1864. In addition, Mott has to his credit the remarkable record of successfully ligating the common iliac at its origin (1827), the carotid for subclavian aneurysm (1829), the carotid for anastomosing aneurysm in a three months' infant (1829), the external iliac for femoral aneurysm (1831), the right subclavian within the scaleni (1833), both carotids simultaneously (1833), and the right internal iliac (1837). Besides the innominate artery, says Billings, Mott "tied the subclavian eight times, the primitive carotid fifty-one times, the carotid twice, the common iliac once, the external iliac six times, the internal iliac twice, the femoral fifty-seven times, and the popliteal ten times."

Dr. Mott resigned as Attending Surgeon in 1837 and was immediately appointed Consulting Surgeon, which office he held until his death, April 16, 1865.

small one of about ½ inch depth was passed down and an attempt made with the elevators to raise the included portion without success. The knife, chisel and hammer were then tried with like result. A second trephine of a larger size was applied below and in contact with the first. Having sawn to about ½ inch depth a piece was readily taken out with the elevator. Its undersurface was rough and ragged in one place as if in the process of absorption. On one side there was a small, smooth groove in which was adherent something like pus. No sequestrum was found in the bottom. There was considerable bleeding from the bone so that the cavity could scarcely be kept empty by the sponge. It was filled with lint and a compress roller placed over. The limb was lain on a pillow. The patient bore the operation well and only gave evidence by the rigid contraction of his muscles of the pain that he was suffering.



Lectori Salutem.

Nos UNIVERSITATIS REIPUBLICÆ NOVI EBORACI Cancellarius
Vice Cancellarius, Cæterique Regentes hoc scripto testatum volumus
Johannem A. Pool postquam se suosque in Re medica progressus
Professoribus nostris in Collegio Medicorum et Chirurgorum quod est in
URBE NOVO EBORACO probasset, luculento testimonio ab iis nobis commendatum ad
summos in medicina Honores, GRADUM nempe DOCTORALEM, evectum esse. Eique
amplissimam potestatem medicinam ubique gentium legendi, docendi, faciendi concessam,
aliaque omnia privilegia, immunitates, juraque quæ hic aut usquam alibi, ad DOCTORATUS
apicem evectis concedi solent. Cujus Rei, quo major esset fides, Nos Sigillo Communi Universi-
tatis apposito CHIROGRAPHA apposuimus Albaniæ Anno Reipublicæ [illegible]
Atque salutis humanæ Millesimo octingentesimo [illegible] Mensis Martii [illegible]
vigesimo [illegible]

Johannes Tayler Cancellarius.

Wright Post M.D. Præses ac Anat. & Physiolog. Prof.

David Hosack M.D. Theor. et Pract. et Clin. Medicin. Prof.

Gulielmus [illegible] M.D. Chemiæ Professor

Samuel L. Mitchill M.D. Hist. Nat. & Botan. Prof.

Valentine Mott M.D. Chirurgiæ Prof.

Johannes W. Francis M.D. Artis Obstet. necnon Mulier. et Infant. Morbor. Prof.

FIG. 20. DIPLOMA OF THE UNIVERSITY OF NEW YORK, TO DR. JOHN A. POOL WITH SIGNATURES OF DAVID HOSACK, WRIGHT POST AND VALENTINE MOTT.

One cannot fail to marvel at the fortitude shown by these patients and to admire the mental discipline of the surgeons which enabled them to carry on under such trying circumstances.

Fractures and dislocations are well represented in the note book, and several of these cases will be reviewed.

Compound and extensively comminuted fractures were often complicated by delirium tremens, erysipelas, gangrene and tetanus, and often came to amputation of the injured part. As a preliminary to the case reports we will review some of the teachings of the period.

Alexander H. Stevens M. D.
Attending Surgeon

FIG. 21. ALEXANDER HODGDON STEVENS, M.D., ATTENDING SURGEON, 1817–1839.

Alexander Hodgdon Stevens, the son of Ebenezer and Lucretia (Ledyard) Stevens, was born in the city of New York, September 4, 1789. The Stevens family was originally from the County of Cornwall, England.

Dr. Stevens graduated from Yale College in 1807. His medical studies were pursued in the office of Dr. Edward Miller, an eminent and greatly esteemed physician. Dr. Stevens obtained his degree of M.D. at the University of Pennsylvania in 1811. In March, 1815, he was appointed Surgical Dresser in the New York Hospital, and subsequently served as House Surgeon for the space of one year. He pursued his studies abroad, making several trips to Europe. During the War of 1812, Dr. Stevens served as a surgeon in the army until the declaration of peace. In early life he made a name for himself by the publication of a translation of Boyer's treatise on "Surgery," and later he wrote several valuable surgical memoirs.

He became Professor of Surgery in the College of Physicians and Surgeons, where his lectures were attended by large and attentive classes.

Dr. Stevens, who was chosen one of the attending surgeons of the New York Hospital in 1817, brought into the Hospital the practice of clinical instruction both at the bedside and in the theatre of the hospital, after the manner of his great model, Boerhaave. He continued as Attending Surgeon until 1839, when he resigned. He was vice-president of the American Medical Association in 1847 and president in 1848; president of the Academy of Medicine in 1851. He was the author of many articles contributed to the medical periodicals, and also of short monographs on surgical topics. He was afterward appointed Consulting Surgeon and continued to hold that office until his death, March 30, 1869.

Cooper writes[18] that:

> The great parade in making violent extension, in order to reduce fractures, is quite abandoned by the moderns. When the muscles are relaxed in a scientific manner the ends of the fracture may, in general, be put into a state of apposition with the greatest ease, and very little extension is necessary. Many fractures are not in the least displaced.

Again according to Cooper:[19]

> Erysipelas is intimately dependent on the state of the constitution. Persons in the habit of drunkenness, and other species of intemperance, and who, in a state of intoxication, meet with local injuries, often have erysipelatous inflammation in consequence of them. Other subjects, who lead more regular lives, when they meet with similar injuries, experience healthy inflammation . . .
>
> In general, erysipelas has its principal source in a disordered state of the chylopoietic viscera, and, perhaps, mostly in a wrong state of the bilious secretion. It seems, also, to be often connected with a suppression of perspiration; for it never recedes until this symptom is relieved.

Again this surgical master, writing about compound fractures states:[20]

> There are then two grand moments always to be observed and profited by, in cases of compound fractures, when the surgeon has it in his power to decide whether it is most advisable to try to preserve the limb or to sacrifice it for the sake of the patient's life.

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The one is immediately after the occurrence of the accident, and before an inflammatory and gangrenous tendency in the limb has had time to form. The other is after the subsiding of the first inflammatory symptoms consequent to the injury, when the constitution seems incapable of bearing any longer the great irritation and immense discharge from the wound, and when the hectic fever seems more likely to close the patient's existence, if a further perseverance in an attempt to save the limb be made.

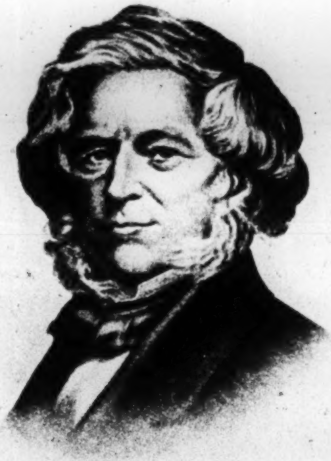
Compound fractures often led to amputation, in fact were the most frequent cause of amputation, an operation which occupied an important rôle in the surgery of the period. It is appropriate, therefore, in this place to present the prevailing views and practice.

According to Gibson[21] amputations were done for:

1. Gunshot wounds and fractures.
2. Mortification.
3. Tumors.
4. Diseased joints.
5. Ulcers.

It will be of interest to review certain technical details of an amputation of the thigh (the description is taken from Gibson's Surgery[22]):

> The patient being seated on the edge of a strong table, with his back supported by pillows, and assistants on each side to take charge of his hands and arms, the tourniquet is applied by an assistant about three inches below the groin . . . The surgeon directs an assistant to elevate the leg and support it nearly in the horizontal position, and then carrying the amputating knife under the limb, until it nearly reaches the side on which he stands, applies it to the thigh as low down as the disease will admit, and with one continued sweep divides, by a circular cut, the integuments, fat and fascia. The large knife is then exchanged for a scalpel, with which the operator separates the loose cellular membrane connecting the integuments to the muscles, and turns back the skin to the extent of two



John C. Cheesman House Surgeon

FIG. 22. JOHN CUMMINGS CHEESMAN, M.D., ATTENDING SURGEON, 1821–1856.

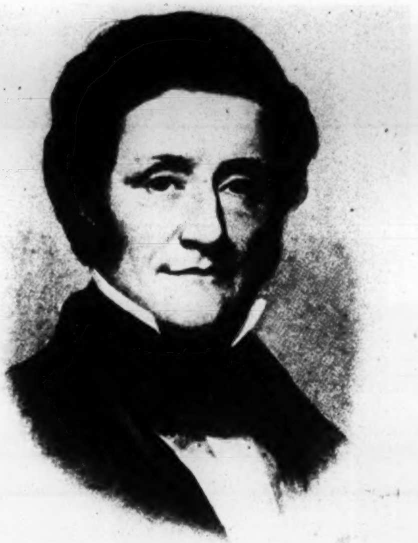
John Cummings Cheesman was born in the city of New York on February 20, 1788. He was the second son of Forman and Ann (Cummings) Cheesman. He attended school in Philadelphia and in New York and was a student of medicine under Dr. Valentine Seaman, graduating from Queens College, now Rutgers, in 1812, with the degree of M.D.

Dr. Cheesman was a strict member of the Society of Friends. He married, on December 14, 1814, Martha Matlack, daughter of Willet and Mary Matlack Hicks, and died on October 11, 1862.

Dr. Cheesman was appointed Attending Surgeon to the New York Hospital in 1821, and continued the duties of that office until 1856, when he resigned. At the time of his death he was Consulting Surgeon to the New York Hospital, having been appointed to that office upon his resignation as Attending Surgeon, and was also the senior member of the Board of Trustees of the College of Physicians and Surgeons of New York. He always lived in the city of New York and was active in all matters pertaining to the practice and progress of his profession.

inches . . . Having resumed the amputating knife, and keeping it close to the rounded margin of the inverted integuments, the surgeon next cuts through the muscles down to the bone. In making this incision, the edge of the knife should be inclined upwards, in order, as it were, to hollow out the front of the muscles in the form of a cone. With the scalpel, the surgeon separates the muscles from the bone for two or three inches, after which, an assistant applies the slit of the retractor around the bone, twists its ends together, and forcibly pulls the muscles upwards. The bone is next divided by the saw, and the limb removed. A soft sponge is applied to the surface of the stump, and the blood being cleared away, the femoral artery, enclosed by its sheath, and lying near the bone, may be distinctly seen. With a tenaculum, it is drawn out, separated from its accompanying nerve, and tied with a strong round ligature. After this, the assistant slackens the tourniquet slightly, when a jet of blood will generally be perceived from some of the branches of the profunda and other arteries. These vessels must likewise be taken up successively, until the whole are secured. But often it happens that the vessels, from an approach to syncope, retract, and for a time do not bleed. The surgeon, aware of this, must not be too hasty in closing the stump, but should rouse the arterial action by wine and water, the admission of fresh air into the room, and solicit, gently, the extremities of the vessels on the stump, by warm water and the sponge. As soon as all danger of secondary hemorrhage is over, the stump may be dressed. The ligatures being brought out of the upper and lower corners of the wound, its edges are pressed together by an assistant, in such a way as to cover completely the extremity of the bone, and form a cushion for it out of the cut muscles and integuments . . . Adhesive straps are next warmed and applied—with interspaces of half an inch between them.

Pott remarked:[23] "The amputation of a limb is an operation terrible to bear, horrible to see." The suffering



John K. Rodgers
House Surgeon. 1816–17.

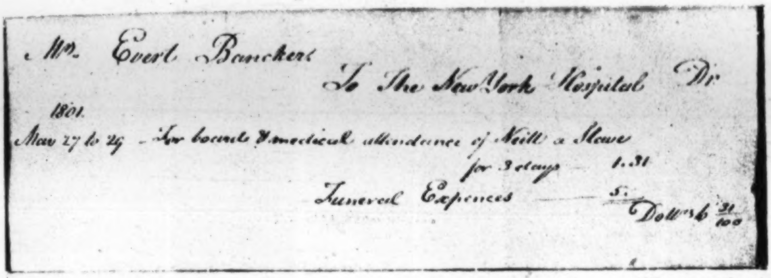
FIG. 23. JOHN KEARNY RODGERS, M.D., ATTENDING SURGEON, 1822–1851.

John Kearny Rodgers was born in the city of New York, October 18, 1793. He was the eldest son of Dr. J. R. B. Rodgers, who was an Attending Physician to the New York Hospital from 1794 to 1807. His mother was Susannah R. Kearny. After completing his studies at Princeton, in 1811, he entered the office of Dr. Wright Post, and in March, 1816, received the degree of M.D. from the College of Physicians and Surgeons.

In 1815, he was appointed one of the assistants on the house surgical staff of the New York Hospital, and after completing his tour of duty (1817) he took his departure for Europe, there to pursue his studies. While in Europe he became greatly interested in diseases of the eye and made a special study of that class of disease. Upon his return in 1818 he became Dr. Post's demonstrator of anatomy, and in 1820 was one of the founders of the New York Eye and Ear Infirmary. He was considered one of the foremost surgeons of his day. He was the first to tie the left subclavian artery within the scaleni for aneurysm (1845), but with fatal result, the first successful case being that of Professor W. S. Halsted, of Johns Hopkins (1892). He was also known for the successful wiring of an ununited fracture of the humerus in 1827.

In 1822, he was elected Attending Surgeon to the New York Hospital and served in that capacity until his death, November 10, 1851.

of a patient seems to have been of little moment. For instance in gunshot wounds Gibson states:[24] "It is very important in all gunshot wounds to suppress hemorrhage and extract the foreign body as soon as possible . . . Severe pain should never be an obstacle to examination . . ."



Mr. Evert Bancker

To The New York Hospital Dr

1801

Mar 27 to 29 – For board & medical attendance of Neill a Slave for 3 days — 1.31

Funeral Expences — 5.

Dollrs 6 31/100

FIG. 24. ORIGINAL BILL RENDERED BY THE HOSPITAL TO EVERT BANCKER, 1801, FOR MEDICAL ATTENDANCE AND FUNERAL EXPENSES OF NEILL, A SLAVE, A PATIENT IN THE LYING-IN-WARD. (SEE MINUTES VISITING COMMITTEE, VOL. 1, MARCH 27, 1801.)

In view of the recent arguments as to operations at the front near the field of battle it is of interest to quote Gibson's statement of 100 years ago:[25]

> Military Surgeons have been often accused of amputating limbs unnecessarily; but it should be remembered, that after a battle the wounded are liable to be hurried from post to post, and in carts or wagons, for days together. Under these circumstances, the patient would not only suffer immense pain, but his life in many instances be sacrificed. The military surgeon, aware of this, amputates the limb on the field of battle, or as soon as possible afterwards, and dresses the stump.

The importance of muscular relaxation, so essential to the proper reduction of fractures and dislocations, was fully appreciated by these men and, in the absence of anesthesia, it was obtained in some degree by the administration of opium and by bleeding the patient to the point of syncope. This procedure was termed "Bleeding to deliquium animi."

Case Twelve

Having had a dislocation at the shoulder joint nineteen days previous to his arrival in this city and finding the usual endeavors to reduce it unsuccessful, Dr. Seaman, the Surgeon in Attendance, was called and having fixed him in such a position as to prevent the free motion of his body by rollers passed around him to a post and an assistant behind, rollers or napkins were applied to his arm to make extension. He was bled till deliquium commenced, when gradual extension by the napkins was commenced and continued till the head of the bone was replaced in its socket which was restrained by a compress in the axilla and a bandage applied round his body. In the course of three or four days these were abandoned and he gradually recovered the use of his arm. He was discharged cured.

Note: In this case it was observed notwithstanding the general relaxation from the deliquium induced still, upon the stimulus of extension upon the limb, the counteracting contraction of the muscles was very great and it required the extension to be continued forcibly and steadily for a considerable time before it was overcome. Immediately upon the reduction, however, it could be put out and replaced with the greatest ease and required a support by a bandage for some time to keep it in joint.

Two cases of delirium tremens complicating fractures illustrate the methods of treatment:

Case Ninety-six

John Anderson, a native of Ireland, aged 42, entered the New York Hospital November 4, 1831 with fracture of both bones of the right leg near the ankle, attended with much contusion and slight laceration of the surface. The accident happened from a fall about four days ago. The leg is exceedingly discolored, and of a dark purple hue from the knee almost all the way down to the ankle. The patient is in a state of great agitation, constantly twitching and irritating the limb and raving with delirium tremens.

Treatment: Have an evaporating lotion to moisten the wrapper in which the limb is involved—and put the patient on the use of Tinct. Opium one dram every two hours. November 5th, the patient has not slept and he is now in such a condition as to require to be tied down to his bed. Continue the laudanum and add to every dose one ounce of spirits. In the afternoon he had a dose of calomel and jalap each grains 10 and the laudanum was changed for opium in substance, grains one every two hours. A few dark-colored vesications are seen on the surface immediately over the seat of the fracture. November 6th, delirium unabated. Have a pill of opium every hour and a bottle of Porter daily. During the afternoon the patient became a little calmer and slept for two hours. November 7th, patient has slept uninterruptedly all night and is now rational with but few signs of delirium and very little subsultus. Have a pill every three hours and continue the Porter. November 9th, there are still several vesications over the seat of fracture. Patient sensible to the touch of a finger on any part of the leg. 10th, the injured surface not quite so dark as formerly—feeling in the part perfect—patient calm. Continue the Porter and take the pill of Opium twice a day. Keep the leg at rest and constantly moisten with the evaporating lotion (proof spirit one part—water two parts). After a few days the superficial injury having been repaired and the natural appearance and color of the surface restored the leg was placed in the splint of Mr. Armsbury. About two weeks subsequent to the setting of the limb, the patient with the assistance of a crutch began to walk about the ward. December 27th, discharged cured . . .

Case Forty-six

James Brown, a native of Ireland, aged 40 years, accountant, was admitted into the hospital April 9, 1813 for a fracture of the leg. The tibia and fibula both broken just below the knee. It occurred two or three days previous to his reception. At the time of his admission he was laboring under the most furious delirium, unacquainted with his situation and making constant and powerful efforts to get up to walk. He was seized with this the day after the accident occurred, and during the short time he remained at home preceding his admission here, he had made several attempts to walk which undoubtedly produced the high degree of inflammation affecting his leg at this time. It was very much swelled, skin of a purple hue and affected with frequent spasms. Vesicles at several places had made their appearance and under existing circumstances there was great reason to apprehend sphacelus. Immediately after admission he was carried to bed, his leg laid upon a pillow, supported by splints and bathed with spirits. At night he made such violent and frequent efforts to get up that it became necessary to resort to the straight waistcoat to confine him to his bed. April 10th, he was so much exhausted by his vehement efforts as to render the preceding measure unnecessary; he was accordingly released from his irksome confinement. In addition to the local application, he was directed to take a pint of brandy during the day. He still remained delirious though not so violent. By the continuance of this last prescription for two days he was perfectly restored to his senses, a change so sudden and unexpected as to astonish all who saw him. As he was a man of intemperate habits this stimulating plan was persisted in until all apprehensions of sphacelus disappeared and the limb exhibited a healthy appearance. Spasms continued to affect the leg occasionally six weeks after the accident. The bones were much longer than ordinary in uniting, owing undoubtedly to the debilitated state of his system produced by his intemperate mode of living. July 7th, he was discharged cured.

There were several cases of fracture of the spine, all fatal:

Case Ninety-one

Charles Dodge, a man in the prime of life was brought to the New York Hospital on Thursday, 18th of May, 1826 with an injury of the head and spine. I was informed by himself and persons who were present that the day previous at five o'clock P.M. he was working on board of a vessel. He says that he struck his head and shoulder at the same time, and that excepting these places he feels pain nowhere else. Some persons took him to a store in the neighborhood where he was bled largely from both arms by a medical gentleman who was sent for to see him. About 9 o'clock the next morning he was brought in. He was in apparent health, had his senses perfectly, and complained of pain in the neck and head which was a little bruised. Since the accident he neither could or felt any desire to pass his urine and feces. His extremities were paralyzed; he could feel, however, if he was pinched on the breast and shoulders but no lower. He had a partial erection of the penis, a symptom frequently attending injuries of the spinal column. Whenever his head was moved much forwards or backwards it pained him very much and he desired to be laid in a perfect line with his body. He was laid quietly in bed and, having examined his back to ascertain whether any injury existed there, his urine was drawn off by a large catheter the use of which was rendered necessary by the paralyzed state of the bladder and a stricture about the neck of it. 12 o'clock an injection was administered to relieve his bowels and was ordered to be repeated every half hour till it operated. Half past 12 P.M. two injections have already been given without producing any effect, neither does he feel any desire to evacuate his bowels. A consultation of the attending surgeons being called at one o'clock and no operation being decided upon, another was ordered to be called at half past 4 P.M. 3 P.M. the following medicine was administered:

Pulv. Mur. Hyd. grains 10
Com. Jalap grains 20
Ft. Pulv.
This to be taken immediately and
followed by another injection 4 P.M.

I drew off the urine which was fast collecting in his bladder from an inability of the muscular fibre to expel it. At half past 4 P.M. another consultation was held and it was concluded not to operate on him as the chance was very small. 6 P.M. venisectio 8 ounces. Abdomen much swelled and hard to the touch; has had three injections and no effect produced as yet. 8 o'clock the injections operated freely—feels rather better. His food during the accident was mild and consisted chiefly of fluids such as tea and coffee.

May 19th, 3 A.M. died.

Examination after death showed that nothing could have saved him, the spinosis processes of the fourth lumbar, fifth cervical vertebra were driven in pressing against the medulla spinalis.

Fractures of the skull were quite numerous. Some of these cases were trephined with generally fatal results. It is noteworthy that in the cases without depression, including four of compound fracture, good results were obtained under expectant treatment. The energetic and bizarre methods of treatment are striking:

Case One Hundred and Seventeen

Fracture of skull with bleeding from ears . . . He was ordered a dose of senna and salts, had a cooling lotion applied to his head, took antimonial solution in doses sufficient to nauseate him, and was bled from the arm to eight or ten ounces when he felt faint . . . A blister was applied to the back of his neck . . . Repeat blister to neck . . . He now converses freely with the nurses and other patients and has been all along sensible enough to help himself to a good round quid of tobacco which he usually carries in the left side of his mouth to conceal the paralysis of those muscles. An issue[26] was ordered to be made over the left mastoid process. A small piece of camphor was burnt on that spot producing a large eschar which separated in the course of ten days and the ulcer was dressed with Savine ointment. He went out improved in his hearing, the paralysis remaining as it was . . .

Case Sixty-one

. . . January 18th, continues delirious. Was directed to have a seton[27] inserted into the back of the neck. The patient acquired some strength so as to enable him to sit up and walk a little about the ward. His delirium appeared in some degree to leave him. Himself and his friends being anxious to have him removed from the hospital as soon as his state would admit, he was discharged on the sixth of February. His intellect not perfectly restored, the friends were therefore advised to keep the seton in his neck.

As an example of prompt and successful intervention in a case of depressed fracture we quote the following:

Case Seventy-five

Thomas Burns, born Ireland, aged 16 years came into the hospital June 8, 1819 at six o'clock P.M. A large block weighing six or eight pounds fell nearly sixty feet directly on the left side of his head. When he was received, which was about an hour after the accident, he was laboring under strong symptoms of compression of the brain. No external injury of the scalp was produced yet an irregularity in the natural rotundity of the head was at once perceptible. We immediately divided the scalp in the form of a crucial incision which enabled us to ascertain the precise nature of the injury. An extensive fracture accompanied with depression of the bone exhibited itself. The man was then removed to the operating room, no delay as to consultation could be admitted of, the skull being fairly denuded of soft parts around the fracture. Two portions of the os frontis were removed. The fracture extended down the course of the coronal suture, across the temporal bone and probably near or quite to the basis of the cranium. The pieces that were removed were situated at the upper and inner part of the os frontis near its junction with the os parietalia at the parietal suture. The loosened portions were taken away without application of the trephine and the whole properly raised by means of the elevator. The dura mater was found detached to a very great extent, so much so, that the hand could be introduced between it and the skull down to the crista galli of the ethmoid bone. Its texture was not at all injured. Very sudden restoration of his senses took place after removing the compressing cause. He spoke and answered questions at this time rationally. The blood being removed, the scalp was brought together by adhesive straps and lint laid lightly upon the parts, over which was placed a night cap and a small capeline bandage. He had been bled just after the accident and lost considerable blood during the operation. 10 o'clock in the evening; patient is apparently easy, some reaction coming on—ven. sect. ten ounces; confined to a dark room, barley water for drink and nourishment. June 9th, patient has slept well during the night, says he feels but little pain in his head. Bowels confined. H. Sulph. Sodae one ounce, ven. sect. fifteen ounces. June 10th, he has had a comfortable night and expresses no pain. His bowels have been freely opened by the salt. Skin a little heated, pulse somewhat frequent. H. Aqua Ammon. Acet. ounces one every two hours. Diet strictly antiphlogistic. June 11th, patient still continues quiet, pulse a little more quickened. Ven. sect. 10 ounces. Repeat the cathartic of salts, resume the use of the Aq. Ammon. Acet. after the operation of the salts. June 14th, patient since the last report has been exceedingly comfortable. No unpleasant symptom whatever has yet taken place. Pulse is calm and soft. Skin is moist. Head entirely free from pain. Faculties of the mind are still preserved. Bowels are kept free by small doses of the Sulph. Sodae and the skin moist by the Sp. Mind. June 16th, the situation of the patient is not as favorable as on the 14th. He complains of some pain in the head attended with a degree of restlessness and a loss of understanding. Ven. Sect. 12 ounces—repeat cathartic—Emp. Vesicat ad Nuchae. June 18th, by the combined operation of the bleeding, purging and blistering, the patient is almost entirely exempt from the symptoms of the last report. The head begins to smell unpleasant. Let the dressings be occasionally moistened with a little spirits. Continue the Aq. Ammon. Acet. June 24th, the dressings were removed and adhesion of a very considerable portion of the scalp had taken place, and that part which had remained ununited was suppurating very kindly exhibiting a healthy, granulating surface. It was again dressed with lint and a night cap loosely applied to the head. All excitement of the system has abated, pulse calm, skin soft and moist, functions of the sensorium totally undisturbed. His bowels are kept soluble by salts. His regimen still antiphlogistic. July 1st, the head was again dressed for second time. Wound looks healthy, granulating, suppuration healthy, some slight appearance of a tendency to exfoliation in one part of the bone that was denuded of pericranium. July 18th, the wound continues healthy and cicatrizes slowly. There is some swelling of the left side of the face accompanied with considerable pain but no redness. This pain is more troublesome at night and has for some time disturbed sleep. It has been much relieved by the application of blisters. August 2nd, he was seized with a most violent pain in the head in consequence of a slight blow which he received from a pillow. This was only thrown from the opposite bed about three feet distant. I cannot ascribe this return of pain entirely to the blow, as there had been a strong predisposition to inflammatory action some days previous which was evinced by the tension of the pulses and whiteness of tongue. Ven. Sect. 12 ounces, Sulph. Sodae 1 ounce. Emp. Vesicat to the forehead. August 3rd, pain in the head and other symptoms of increased action are not yet subdued. Repeat Ven. Sect. 10 ounces. August 8th, patient now expresses himself as being well. All internal remedies are discontinued. The head is dressed daily and wet with a stimulating wash. Cicatrization of the wound is nearly complete. September 11th, he is not entirely recovered from the injury. The wound is healed and the hair is growing out from that part of the scalp. Functions of the mind are as perfect as before the accident. The interspace of bone is supplied by soft parts. In order to protect his head against accident a metallic plate covered with oil silk and connected to a tight cap is accurately applied over the surface deficient in bone. December 12, 1819, he was dismissed from the hospital cured.

Some of the case histories are written in a quaint amusing style, for instance:

Philip Rogers, born in Ireland, laborer, having been to a frolic on the fourteenth of tenth month (October) 1810 he became intoxicated and, while at the window passing urine from the second story, had the misfortune to fall from thence on a pavement covered with round paving stones, his head first struck and the scalp greatly lacerated, commencing about the junction of the lambdoid with the sagittal sutures and extending forwards so far as where the hairy scalp commences so as almost to denude the left parietal bone and to remove the greater part of the pericranium from the frontal. This happened about 1 A.M. and at 8 o'clock following was admitted to the hospital. He lost a great deal of blood as was evinced not only by the feebleness of his pulse but the large coagula which were to be seen on the spot where he laid.

Two cases of chronic osteomyelitis are worthy of report. The first bears testimony to the tremendous aid the roentgen ray brings to modern surgery and gives the post mortem findings in a case of sepsis which intrigued the pathologist. The second is outstanding as being among the first successful disarticulations of the hip joint. This formidable operation was one of the brilliant feats of that master surgeon, Valentine Mott.

Case Ninety-nine

James Hall, aged 20, born in Connecticut entered the hospital November 5, 1831 for the purpose of undergoing an operation for the cure of a disease of which the following is the history:

About three years ago the patient had a fall from the foreyard of a ship and struck on the left side and leg. Subsequent to the fall his thigh became swelled, hard and painful. About six months after the accident two openings were made with a lancet for the discharge of matter from the affected thigh. Three other openings formed of themselves along the course of the femur, and these with the two previously made have continued open ever since. Numerous pieces of bone of various sizes have at intervals made their way through these outlets. Ten or twelve of these pieces the patient states were of an inch in length. About a year since he entered the hospital but the general state of his health was at that time thought to contraindicate any surgical operation for his relief. He has been absent from the house since the early part of last spring; and at present, though evidently suffering from the effects of long continued irritation, yet in general health he appears to be somewhat improved. He is quite lame, and the circumference of the left thigh throughout its whole length is considerably greater than that of the right. The affected limb is hard to the feel and by acupuncturation it is found that the shaft of what was once the thigh bone is surrounded by a newly formed deposition much larger in diameter than the original, and not more than an inch beneath the surface. Into the ulcerated openings a probe may be introduced quite through the new bone into the cavity containing the sequestrum.

Operation: On the 17th of November at 12 o'clock Dr. Rogers commenced an operation for removing the dead bone. The patient having previously taken an anodyne and the necessary preliminaries adjusted, the first incision was made about six inches in length on the anterior and outer part of the thigh in a line parallel with the shaft of the bone. After cutting down to the newly formed bone and pressing open the lips of the wound the trephine was applied to the bone and a piece removed from the upper and another from the lower angle of the wound. The intermediate portion between the two cuts of the trephine was then sawn out and a gutter in this way made through the new bone which was found to be almost ½ inch in thickness. From the cavity thus opened several small pieces and one piece of the dead bone two or three inches in length were removed. A piece still larger, however, was found to be firmly fixed in the cavity, and for the removal of this an enlargement of the opening into the bone was required. The wound was extended at its lower angle, the trephine again applied and another piece sawn out. The opening through the bone was now about six inches in length. The whole of the dead part being removed, the bleeding vessels of the substance of the bone were cauterized to prevent hemorrhage. A small tent of sponge was applied to the mouth of one of the arteries that still seemed disposed to bleed. The wound was then closed and dressed with lint and adhesive straps. The operation was completed in two hours. The patient was considerably exhausted. The loss of blood was not great.

Subsequent history: Upon removing the patient from the table his stomach became irritable and he had a fit of vomiting. Towards evening he became more calm and at night took an anodyne draught containing forty drops of laudanum.

November 18th, his pulse the day preceding the operation was 84. The next morning after the operation it was 126, small and soft. He complains of want of sleep, had pain and twitching in the limb. At noon pulse 142 with great heat at the seat of the wound. Apply evaporating lotion to the limb. He is desirous of cooling drinks and yet, owing to the irritability of his stomach, he is unable to drink cold water. Toast water was directed—had an anodyne at night. November 19th, slept some during the night, pulse 118. Tongue a little furred—much heat and soreness in the limb. Apply a poultice over the dressing and the parts contiguous. But this towards evening proving unpleasant was removed and the evaporating lotion resumed. Had more fever than usual during the day, from having taken too hearty a breakfast. At evening had the usual anodyne. 20th, patient calm, has slept well, pulse 110, at noon 99. Took for dinner a small quantity of chicken broth—at night the usual anodyne. Morning, pulse 102—noon 99—stomach still unsettled. 21st, morning, pulse 119—noon 110—stomach still unsettled, requiring the use of aqua calcis to prevent the rejection of food. Poultice reapplied to the limb. 25th, pulse in the morning 116 and very weak. Patient rested poorly all night, is now drowsy and indisposed to speak. His bowels every night since the operation have been costive, requiring occasionally an injection for evacuating them. While asleep in the afternoon his pulse was 100. He was put on the use of lime water and porter. 26th, his pulse in the morning 116. He complains greatly of pain, soreness and tension along the right wrist and forearm. The skin over these parts is hotter but not redder than natural, no apparent swelling. 27th, pulse this morning 114. Arm still more painful. He complains of the slightest touch. The part is swelled but not redder than natural. Superficial veins of the wrist and forearm somewhat more distinct and full than usual. The left shoulder is also very painful and the patient complains of soreness all over him. Stomach "burning hot" but by the use of lime water he can keep down his drinks. Wound today dressed for the first time and appears healthy. 28th, pulse in the morning 114. Arm and shoulders as sore as ever. There is also a red spot between his eyebrows which gives him much pain. The whole of the right forearm is swelled and extremely sore. The skin appears glassy and the superficial veins very full. Countenance sunken, no particular soreness in the wound. Pulse in the afternoon same as in the morning. 29th, the twelfth day after the operation at eight o'clock in the morning he expired.

Post mortem appearances. On examination after death purulent effusion was discovered deeply seated and in great abundance within the cellular substance of the forearm and other parts which had been the seat of the pain. The wound itself presented no remarkable appearances.

Note: There have been other cases in the hospital during the winter which serve to show this tendency to the formation of purulent deposits in different parts of the system after severe operations and extensive injuries. Instance the cases of Kelly and O'Neil . . .

Case Eighty-eight[28]

George Byles, aged 10 years, was admitted a patient of the New York Hospital on the 7th September, 1824. He was at this time laboring under the effects of a fracture of the os femoris which had occurred some time previous—and which either through mismanagement or some other cause had terminated in a caries of the broken bone. The boy's health and strength must soon succumb under the constant and unavoidable irritation. Under these circumstances it was deemed necessary to remove the limb in order to preserve life. The treatment pursued before the operation consisted in keeping the bowels regular and supporting the strength by tonic remedies. October 7th, the patient having readily consented, Dr. Mott proceeded to remove the limb which he proposed to amputate at the hip joint. The femoral artery was first taken up, and, it being discovered that the profunda was given off much higher than usual, it also was secured. The knife, Lisfranc's, was then passed through the inside of the thigh between the artery and the neck of the bone passing out near the tuberosity of the ischium, and the internal flap made with one or two sweeps of the blade. The external flap was made from without inwards. At this stage of the operation the assisting surgeons having examined the portion of bone that was exposed, judged that it was not diseased so high up as to require amputation at the joint. Dr. Mott was accordingly led to depart from his original intention and to saw off the bone one or two inches below the trochanter minor. After securing the bleeding vessels the stump was dressed with adhesive straps, bandaged, and the patient dismissed to a ward provided for his sole accommodation. Upon an examination of the extremity of the divided bone, it is evident that the caries was more extensive than had been supposed, and that the remaining fragment was in a diseased condition. Dr. Mott accordingly returned in about two hours after the first operation and with a scalpel detached the remainder of the bone from its articulation at the acetabulum. The patient bore the renewal of his sufferings with considerable firmness. The stump was dressed as before and an anodyne administered. The subsequent treatment consisted in the continuance of an opiate draft morning and evening, to which he had been accustomed, and in keeping his bowels regular by appropriate diet and an occasional laxative. The wound was not interfered with for several days after the operation. October 15th, the dressings were removed—a large portion of the wound had healed by the first intention and the discharge from it was moderate in quantity and bland in quality. The dressings were afterwards renewed at shorter intervals, more or less of the ligatures being removed at every dressing until the 31st October when the last that remained was taken away. The stump now rapidly healed and the boy was soon enabled to go about on crutches. During the progress of cure in this case it was necessary closely to watch the patient, and if at any time excitement was produced, the cause was immediately removed. Notwithstanding, however, all the prudence that could be exercised, through the officiousness of his nurse and his own craving appetite, the quantity and quality of his food could not be as strictly regulated as was desirable. In consequence of which there was a too sudden repletion of the system, and on the fourth November he was suddenly attacked with acute pain in the chest, difficult respiration and the other symptoms of pneumonia. The affected part was immediately rubbed with pure Aq. Ammon. until the surface was considerably inflamed, and a solution of Sulph. Mag. and Ant. Tart. was given until nausea was produced, when the pain became mitigated. After the purgative effects of the above remedy were produced the symptoms were removed, and by keeping up the antiphlogistic treatment for some days their recurrence was prevented. On the first December he was discharged from the hospital cured.

To drugs was ascribed great potency. One sees in the therapy of the time why homeopathy was developed at about this period. While theoretically it was based upon the "law of similia," its inception was probably a protest against the overwhelming dosages which were employed. Thus in the first case cited, December 1808, the patient was costive and a mercurial purge was given, which affected his mouth and brought on ptyalism. His mouth becoming very painful, recourse was had to the free use of tincture opii and to good purpose. In another case the patient "was directed to take of Calomel and Jalap āā grx every 2 hours until they should operate. It was not until he had taken 12 of these doses that 5 or 6 copious stools were procured." As an extreme example of the tendency to overwhelming dosage we give in full an unusual case:

Case One Hundred and Thirteen

Ptyalism with Hypertrophy and Prolapsus of the Tongue.

Henrietta Ritchings of Holland, aged 55, a married woman, entered the hospital November 14, 1832, in a state of profuse ptyalism and with her tongue so enlarged that it protruded between two and three inches beyond her lips and withal it was so much thickened as to completely fill up the mouth and press against the teeth of both the upper and lower jaw. The history of her affection prior to her admission is that about two months ago she had an attack of fever and ague and that upon applying to a physician in the country where she resided he ordered a dose of calomel and jalap. This was taken but did not operate; it was followed by another of the same kind, but neither of them operated upon her bowels. The quantity of calomel in both doses is said to have amounted to twenty grains. No other medicine of any kind was directed or used. But about two days after taking that already spoken of, her mouth became affected. There was profuse discharge of saliva and almost at once her tongue swelled and protruded. Her mouth was washed with sage tea and she took sulphate of magnesia but the disorder was not abated. The flow of saliva was constant, but strength became exhausted, her digestion impaired and her bowels constipated. At the time of admission she was unable to sit up, and owing to the great enlargement of the tongue she could not articulate her wants. By her signs she gave us to understand that the pressure of her teeth against the tongue caused the most acute pains which she compared to the cutting of a saw. Along the medial raphe the tongue had yielded but little to the swelling, but on either side of this its thickness was at least ¾ of an inch and the dimensions beyond the teeth were everywhere larger than at the part within the mouth. The flow of saliva amounted to about a pint a day. For some time before admission she had lived on soups, milk and such other articles of spoon diet as she could relish. Her food was introduced at the space above the middle of the tongue where, owing to the greater density of structure, this part had not enlarged in pari passu with the other portions. In attempting to drink from a bowl or a teacup more than ⅔ of the fluid taken into the mouth ran out again. Her husband states that several years ago she had an attack of pytalism excited by the same cause. Her tongue then swelled and the inflammation of the surrounding parts was so severe that adhesion took place between the sides of the tongue and the parietes of the mouth. After the subsidence of the inflammation, however, the preternatural adhesion was separated by incisions and the patient at that time recovered.

Treatment: A few days after her admission, Dr. Stevens made several incisions on the top of the tongue. The wounds bled for more than an hour and she lost perhaps six or eight ounces. Poultices were applied to preserve the moisture of the organ and these were afterwards changed for dressings of lint and simple cerate. Her food was not restricted but consisted wholly of such articles as required no mastication, and to allay her irritability and allow her rest at night anodynes were administered. Her usual opiate was the black drop (impure acetate of opium). She occasionally complained of costiveness and at regular intervals had mild laxatives. November 20th, tongue if possible more enlarged than ever; the left portion dry, livid, and more swelled than the other side. She endeavors partly by signs and partly by her inarticulate expressions to state that all the pain she suffers is caused by the pressure of the tongue against the lower teeth. A few days after this dry, black scales like sloughs formed on the upper surfaces of each side of the tongue. These at length peeled off and left a soft and moist surface beneath. In consequence of the pressure from lying she now began to complain of soreness about her nates and sacrum. Her position was often changed and a soap plaster was applied to the sacrum. This gave no relief, a slough formed and continued to spread until it was nearly of the extent of that bone over which it was situated. The Balsam of Peru was applied to the sore and over this a soap plaster. The ulcer extended no farther but it continued to be the cause of much and constant distress. Her tongue was now raised up from the lower teeth and kept constantly elevated by a suspensory bandage passing over the head. This contrivance rendered her much relief. December 4th, tongue freely scarified on both edges by Dr. Rodgers. Bleeding as free as from the former incisions. By the second scarification the organ was considerably diminished. Suspensory bandage discontinued and a small compress drawn by lacings tightly around the tongue. With this on, the organ appeared reduced at least one-half. This contrivance was continued for several days but the pressure gave her inconvenience and, being otherwise annoyed by an irritable and disordered stomach, she desisted from its further application. The front teeth of the lower jaw appeared now to lean forwards as if out of place; they no longer injure the tongue which now lies rather against their bodies than upon their edges. Salivation not so profuse. Irritability of stomach now a prominent symptom. Nothing she could swallow appeared to agree with her and most of her food after being taken turned sour and was ejected. Directed to use weak soup with such other articles as might not ferment; and at the same time she used the infusion of gentian and orange peel. After this her tongue still continued to decline, but she could not express her wants and rather gave expression of lamentation than any definite information as to her condition. December 19th, in the evening her tongue was much smaller, dryer and paler than usual, and at the same time some slight sordes was observed upon the teeth and that portion of the tongue now within the mouth. Skin warm and dry, and at the wrists tight and glassy. Pulse small and rapid. December 20th, in the morning not disposed to give any intimation of her feelings. From this time she gradually sunk and at half past nine in the evening she expired.

At this time her tongue had so much retracted as to be almost entirely within the mouth. On examining the lower jaw it was found that from the pressure of the tongue against the teeth the alveolar process in front had been absorbed and that consequently the teeth had fallen forward for want of due support.

We find in the notes evidence of clinical research, such as a systematic and painstaking study of the effects of muriate of gold in the treatment of syphilis with summaries of ten cases. These were all reported as cured, although the average period of observation and treatment was only about one month. Apparently the disappearance of the chancre was the criterion of cure. This indicates not only a failure of appreciation of the course of the disease but an unfortunate failure to observe or follow the cases for a reasonable period.

In presenting these cases James Inderwick, house surgeon, remarks:

> The cases immediately following which have occurred in the surgical department of the house have been considered worthy of record, not on account of any singularity in the nature of the disease, or extraordinary circumstances attending its progress; but because they exhibit some experiments in the administration of a novel remedy, and afford a few facts illustrative of its effects which may assist in estimating its proper value.

Pills containing ¼ of a grain of muriate of gold were given four times a day.

Summaries of a few of these cases will be cited:

> Case 32, Hannah Barry, aged 18, was admitted March. 1812. She had one chancre of a considerable size on the right side of the entrance of the vagina and another on the verge of the anus, attended with a high degree of inflammation in the surrounding parts. She was enjoined to wash the sores carefully three times a day with soap and water and apply simple dressings. She was put upon the use of the muriate of gold. Discharged cured . . .

> Case 33, Mary Walsh, aged 31, was received May 1, 1812. She had five chancres situated on the labia pudendi and nymphae and a gonorrhoeal discharge from the vagina. Muriate of gold as above. Cured. The gonorrhea was cured during the course of the above treatment by the usual remedies.

> Case 38. Similar. "Being almost cured he solicited his discharge and evinced considerable impatience to go, but being refused he eloped."

In several cases the muriate of gold was ineffectual and recourse was had to the old stand-by, calomel.

Venereal diseases contributed a large proportion of the hospital cases. Syphilis seems to have been very widely distributed. Yet in the matter of diagnosis and differentiation much uncertainty prevailed. Thus, Gibson comments:[29] "But these matters are of very little importance at the present day, except as regards the question whether gonorrhea and syphilis be of the same or of a different nature."

Gonorrhea and syphilis were roughly differentiated by the therapeutic response to mercury.

Cooper,[30] combating the general belief that these were all varying manifestations of one disease, writes: "If the infection of gonorrhoea and the venereal disease be really of the same identical nature, certainly it seems very extraordinary that the former complaint should receive no benefit from mercury, and the latter disease invariably requires this specific remedy."

In one case (74) in which a mercurial course failed, wonderful results were reported following administration of syrup of sarsaparilla and the House Surgeon philosophically remarks:

> This is a case in point where it may be truly said mercury did not cure the complaint. The fair and full effects of

the syrup were tested and demonstrated clearly its efficacy in eliminating the syphilitic or mercurial virus from the system. Whether it is capable of destroying the taint in all cases is left for further experience to prove, but it may be in peculiar constitutions or habits where mercury is not adapted, that it operates so extremely salutarily; or in such condition of the system after mercury has been used acting through the medium of the mercury in subverting the disease.

Despite the fact that the evidence in favor of muriate of gold as a satisfactory substitute for mercury in the treatment of syphilis is not convincing, nevertheless we are impressed by the orderly arrangement of the cases, the care in selecting untreated cases and the keen interest in the experimental method.

For the cure of hydrocele aspiration was resorted to, but this failing an incision was made. In one case "the patient had some fever afterwards and the part became so much inflamed that a poultice was applied. Good suppuration took place, the sac was slowly filled by granulations, and on the 22nd of January, 1816, he was discharged cured," (about four months).

Hemorrhoids were considered as varicose distentions of the rectal veins. They were not operated on unless it was imperative.

Fistula in ano was a favorite subject of discussion. It was classified practically the same as at present. Conservative measures were preferred to operation.

Urological complications such as stricture, acute retention of urine and extravasation of urine were not uncommon. It is of interest to note the procedures employed for retention of urine. The bladder was punctured through the perineum, suprapubically, or per rectum. The perineal method was discarded about this time as uncertain and dangerous. The catheter was being popularized and rendered the necessity for puncture less frequent. The following case presents many points of interest:

Case Seventy-one

Patrick Dean, born Ireland, aged 29 years, entered the hospital April 3, 1819 with retention of urine. The history of this case is as follows:

About eighteen months ago he had gonorrhoea, took various internal remedies but made use of no injections. After having the clap two or three weeks, considerable quantity of blood was discharged from the urethra which he says came on spontaneously or without an external injury. An inability to retain and an occasional difficulty in voiding his urine came on about eight months since which lasted until a permanent obstruction took place. He says that he never had any kind of instrument in his bladder nor was an attempt ever made to introduce one before the complete obstruction had occurred. His scrotum and perineum began to swell three days before there was a perfect stoppage. No water had been discharged in forty-eight hours before he was admitted except a very small quantity that would occasionally ooze out when an attempt to introduce the catheter was made. Various means were had recourse to in order to bring about a discharge of water but none were of any avail. When he was received there was an extensive infiltration of urine in the cellular textures of the perineum, scrotum, penis and lower part of the abdomen; with two sphacelated spots, one situated at the root of the penis and the other about midway between the umbilicus and pubis directly on a line with the linea alba. There was likewise great prostration of strength and a urinous smell diffused over his system.

An interval of half an hour had elapsed after his admission before the operation of tapping his bladder was performed. An attempt was made to perforate the bladder through the perineum but the prostate gland was found so much enlarged that a perforation through the rectum was deemed most prudent; which was accordingly done and the water evacuated per anum. No water was discharged from the opening through the intestine after twenty-four hours but all continues to be discharged at the root of the penis at the sphacelated spot apparently through the urethra. The whole parietes of the abdomen appeared to be involved in suppuration about the fourth day after the operation. Large sloughs of the subcutaneous cellular tissues and muscles of the abdomen have been discharged at various intervals. During the progress of mortification cloths dipped in yeast were constantly applied and cordials with stimulants freely administered. As soon as the dead began to separate from the living parts the yeast was omitted and emollient applications substituted. There has not been at any time since the operation the least difficulty observed in the functions of the bladder. His urine has been regularly secreted and as regularly evacuated. No tenesmus or excoriation about the anus has been complained of. The sloughs have entirely separated about the perineum and the wound looks healthy. The suppuration has now almost entirely stopped and granulations from all the suppurating surfaces are shooting up. April 16th, general health very much amended. The sheath of the external and internal oblique with the transversalis muscles is separated to a very considerable extent and the fibers of the rectus lay bare. The attachment of the skin to the parts below is rapidly consolidating. June 10th, all the various openings have healed, and although a considerable portion of the urethra at the root of the penis was destroyed yet the parts have contracted so much that he is able to pass all his water through the natural route. No pain or soreness whatever is complained of upon pressure about the abdomen or perineum. Dismissed in perfect health June 11, 1819.

We come to the last and bolder chapters of the surgical work of 100 years ago—hernia and aneurysm. One is impressed by the poor results with prolonged and complicated post-operative courses in the cases of hernia and amazed by the brilliance and daring and the successful results in the treatment of aneurysm.

The anatomical types of hernia were fairly well known and the dangers of strangulation were appreciated. The apparent handicaps to passable results were the ignorance of the principles of asepsis and of an appropriate operative technique.

Cooper[31] quotes Pott's gem of surgical rhetoric[32] in discussing the treatment of a strangulated hernia, before having recourse to an operation:

> There is no truth in the whole body of surgical knowledge more confirmed by experience, than what is contained in the following passage of Mr. Pott's Treatise on Ruptures: "A hernia, with painful stricture, and stoppage of stools, is one of those cases in which we can seldom stand still even for a short space of time; if we do not get forward we generally go backward; and whatever does not good, if it be at all depended upon, certainly does harm, by occasioning an irretrievable loss of time."

Four cases of strangulated hernia are given in full. The operation was truly a herniotomy, no repair being performed, and for this reason reducible hernia was not considered as indicating surgery.

Case 94 illustrates the various conservative measures which were employed before operative relief.

Should there be a temptation to smile at these manoevers, let us remember that in our present enlightened day cases of intestinal obstruction due to hernia or other cause, are at times treated by conservative methods in no respect less harmful.

Case Eighteen

Anthony Mirinda, born New York, aged 21 years, an apprentice, was admitted in the House on the twelfth month, 1809 with an enlargement in the right side of the scrotum which first appeared four days prior to his admission. On examination the swelling was found to be owing to hernia. The usual means were had recourse to without success; viz., bleeding, the warm bath, opium, enemata of tobacco, application of ice to the part. A consultation was called and an operation performed by Dr. Seaman, the surgeon then in attendance. On opening the hernial sac it was found to contain a large quantity of fluid of a serous nature and a small portion of intestine which was in a state of sphacelus. The fluid and intestine (as had been suggested by Dr. Post) was contained in the tunica vaginalis testis, he recollecting the boy when an infant to have had congenital hernia. And here we have an instance of its recurring after many years, the boy not recollecting ever having had any pain or swelling in that part before. January 26, had for a few days some slight fever, his diet has been of the fluid kind, as broths, soups, milk, milk punch. The feces have continued to be discharged ever since the operation by the groin at intervals not generally exceeding fifteen minutes, and on the slightest irritations a discharge followed. For a few days the feces had the odor peculiar to them and since has been none other but that attendant on them either in the stomach or duodenum. His general health also appears good.

Note: In this case, on opening the hernial sac, which in fact was merely the tunica vaginalis testis, the matter contained in it was very thin and watery, discolored and of a fetid nature, the intestine itself, having a laceration in the gangrenous part. In the afterpart of the operation, upon dilating the constricted part, the feces of a much thicker consistence were freely and abundantly discharged. Some appearances giving reason to believe that the intestine was not completely mortified in the portion of it adjoining the mesentery no part of it was removed, but the upper portion was attached at the opening by two ligatures to the sac, and the sound part of the bowel returned into the abdomen. In the course of a few days a part of the intestine sloughed off, since which the discharges from the bowels have been at the groin. The orifice of the inferior portion of the gut is still open within the distance of 1½ inches of the superior.

September 14th, has continued in good health to discharge feces by the opening at the groin, only having had three discharges per anum which were dark colored and offensive. October 17th, since last report had a steel spring in the form of a truss with a circular opening in place of the pad and a bladder adapted thereto through which he has discharged his feces and has been enabled to walk about the ward. Since which his fecal evacuations per anum have been almost daily, and a compress well anointed and applied over the opening has been enabled to pass almost all by the natural passage . . .

Case Forty-eight

James Boyle, born Ireland, laborer, aged 70 years, was admitted into the New York Hospital 28th of July, 1813 with strangulated hernia. He had been subjected to a descent of it for some time previous to this and was easily reduced. His present alarming condition was the consequence of a fall from the height of a few feet; its size was very great being nearly equal to a child's head at the time of its birth. Soon after his admission attempts were made to reduce it without success. He was then bled to the extent of 30 ounces and 60 drops of Tincture Opii administered. Its reduction was again attempted, but, as before, failed. The application of ice was now directed and continued as long as was deemed proper without, however, being attended with any other advantage than the subsidence of the inflammation of the scrotum and diminution of its bulk. In the evening of the next day, his pulse still indicating a high degree of inflammatory action, he was again bled to the amount of 18 to 20 ounces. Notwithstanding the diligent use of all the usual remedies in cases of this nature it could not be reduced, and, accordingly, a consultation of the surgeons and physicians of the hospital was called, when it was decided that the operation was the only chance of relief. July 30th, the operation was performed by Dr. Post. The intestine was highly inflamed and of a dark brown color. The greater part of the omentum was also contained in the sac. Adhesions existed between the convolutions of the intestine not apparently of a recent date. The ring was dilated upwards and outwards but the intestine could not be returned and, accordingly, the omentum was removed when it was easily effected. The wound was dressed in the usual manner by sutures and adhesive plaster to retain the edges of the wound in contact with the ordinary bandage and compress. Immediately after being conveyed to his bed an enema was administered which produced the desired effect. He was also directed to take of Aq. Ammon. Acet. half an ounce every two hours which kept up a slight moisture of the skin. In the evening, the pulse being full and hard, he was bled to the amount of 16 ounces and the enema repeated. He passed the night comfortably but at five o'clock next morning he complained of a most excruciating pain in the lower part of the abdomen with considerable chilliness, which were very soon removed by the exhibition of an anodyne.

August 1st, he was directed to take of the following:

Fol. Senna one ounce

Infus. Tart. Potassa one ounce, etc. He took the whole of this quantity without effect. August 2nd, let it be repeated and continue it until it operates. This afternoon his bowels were completely evacuated with much benefit. Complains of little or no pain. August 3rd, he slept well last night, complains principally of debility. Let him take for his nourishment chicken soup, arrow root, barley toast, water for his drink. August 4th, the wound was dressed and appeared very healthy. August 5th, he is occasionally affected with nausea and slight pain in the abdomen. Ligature upon the omentum came away. August 6th, he was seized with a profuse diarrhoea. August 10th, it still continues notwithstanding all the most powerful means to restrain it. August 13th, his health is rapidly declining. His appetite begins to fail. In this lingering condition he continued until . . . when he died. His body could not be examined as his son would not permit it . . .

Case Ninety-four

Jacob Day was received on Tuesday 19th July, 1831 at two o'clock P.M. with a strangulated scrotal hernia. He stated that the intestine first came down about a year ago at which time he had a severe colic. He was then sick about a week, during the latter half of which the gut remained down. It was then spontaneously reduced. Ever since that period he has experienced slight soreness or tenderness about the inguinal canal. During the latter month he has been engaged in driving a stage, during which period he was as well as usual until the morning of Monday, the 18th inst., when he was attacked with symptoms of colic. He took a dose of castor oil which did not operate. In the afternoon of Monday, his attention was first attracted to the scrotum by a sensation of dull pain at the part. He then perceived that the right side of the scrotum was larger than the other, and applying his hand to the part, he found great tenderness on pressure. Doctor Quackenbush was then called in. He made attempts at reduction, and as the man himself thinks with success, since the pain was greatly relieved. An injection was administered that evening but nothing was brought away. He did not sleep on Monday night in consequence of fever and pain about the abdomen. On Tuesday morning the intestine was found again to have descended and Dr. Quackenbush again made attempts at reduction but without success. He ordered him a warm bath and bled him nearly to syncope, taking near a pint, and again attempted the taxis but it was of no avail. At the time of admission he complained of pain in the abdomen with tenderness on pressure. The tumor (which was of the size of a hen's egg) was red and painful to touch, countenance exhibits great anxiety, pulse frequent—100—rather small; nothing has passed his bowels for several days. Stomach very irritable, vomits every half hour or so—fluid thrown up is of greenish color, bitter taste; tongue covered with yellow fur. Soon after his admission an enema was given him but was soon returned without any fecal matter. He was then put in a warm bath and allowed to remain in it for three-quarters of an hour, the temperature being gradually increased. He vomited several times whilst in bath—the ejected fluid being the same as he had vomited before. Before he left the bath the taxis was gently tried but without success. On leaving the bath a tobacco enema was given him (made by infusing one dram of tobacco in one pint of hot water); part of this was thrown up which in the course of ten or fifteen minutes produced great prostration, sickness of stomach, diminished frequency of pulse with smallness. The taxis was again tried but unsuccessful. At four o'clock P.M. Dr. Rodgers, the attending surgeon, proceeded to remove the stricture by the usual operation. An incision (commencing a little above Poupart's ligament extending down to the bottom of the scrotum) was made down through the integuments and cellular substance. The dissection was continued down through the superficial fascia, through the fascia which covers the cremaster muscle, through the cremaster. Upon opening the hernial sac about ½ ounce of dark fluid was discharged. A portion of gut four or five inches long was found in immediate contact with the testicle, forming a variety of hernia called congenital, which has been so ably described by Sir Astley Cooper—the tunica vaginalis testis here forming the hernial sac. The intestine was of a deep mahogany color, in some parts almost black. The stricture was found to exist at the external abdominal ring. A probe pointed bistoury was passed up being laid flat on forefinger of left hand. The point of bistoury being insinuated into the stricture, the edge was turned forwards thus cutting the stricture directly upwards. Some difficulty was now found in returning the intestine. After some ineffectual attempts Dr. Rogers, upon passing his forefinger up the inguinal canal, found another stricture at the internal abdominal ring. This was divided in same way as the other and the intestine was now easily returned. The lips of the wound were brought together with sutures and adhesive plaster. Lint and compress laid over and being secured by T bandage. Soon after the operation an enema was given which in the course of half an hour brought away considerable quantity of fecal matter with some bloody fluid resembling the washings of raw meat. Pulse 110, small. Pain in abdomen about same, tenderness on pressure. Vomiting occasionally returns—takes a little lemonade to allay thirst and irritability of stomach. 8 P.M. patient rather more comfortable than he was before the operation; has not vomited for an hour or more. Pulse 100, small. Tension and pain of abdomen about the same. 10 P.M.

pain and tension of abdomen increased—great tenderness on pressure, pulse more tense. Venisectio ad 24 ounces—patient felt faint, vomited a little, pain in abdomen not relieved. Ordered warm fomentations of Infus. of Opium to be continued without intermission through the night, and enema to be given immediately. 20th, 6 A.M., the pain and tension of abdomen rather increased—pulse frequent, tense Should have remarked that two grains of calomel were given him last evening. He vomited in one half hour after taking it and several times during the night. Had three scanty stools during night. Ordered him one ounce of Ol Ricini which however was not retained more than a few minutes. Venisectio ad 10 ounces. This produced some relaxation, faintness, but the pain was not relieved. The attending surgeon directed the venesection to be repeated until faintness ensued. This was done at 9 o'clock A.M.—when 16 ounces had been taken. Hirudines Viginti Quartuor ad Abdominem. After removal bleeding promoted by warm fomentations—pain not relieved. 12 M. the fomentations have been continued without any marked benefit. Patient has had one stool since morning visit—rather darker color than natural. Pulse is smaller, frequent—130; extremities cold. Let him have a little wine occasionally. Warmth applied to extremities—evidently sinking. 6 P.M. day expired about 5 o'clock. He had been gradually sinking since noon. His extremities cold—face covered with a clammy sweat—pulse threadlike—great difficulty of breathing—facies hippocratica—a struggle succeeded when death closed the scene.

No opportunity was afforded of examining the body as the friends removed the body same evening . . .

Case One Hundred and Three

. . . came into the hospital June 3rd, with femoral hernia of the right side and inguinal of the left, the former of two years standing, the latter of three years. On the Friday previous to her admission she had excited vomiting from something which she had eaten. In the meantime she sent for an emetic which relieved her for a time, though the vomiting continued at intervals. Together with this state of things her bowels were constipated and she had had no evacuations for 24 or 36 hours except from the lower tract by injection. On Sunday, 3rd June, she was examined by Dr. Rogers who advised her to go to the hospital. A consultation was called at 1 P.M. On examining the abdomen it appeared tense and painful on pressure. The tumor of the left side being inguinal and reducible gave no pain when gently pressed, but when pressure was continued, it became more painful; while the femoral of the right being irreducible gave no evidence of strangulation neither pain on pressure. This case was interesting as well as singular as the symptoms were so equivocal that it was no easy matter to decide on which side to operate. Here was undoubtedly symptoms of strangulated hernia, with the hiccough, vomiting, constipation, tension of the abdomen—yet no local pain in the tumor which was irreducible, thus no certain indication was afforded on which side to operate. The surgeons assembled again at 9 P.M. without concluding upon an operation. At 11½ they again assembled and concluded to operate if the woman consented. She did not, and as the symptoms were not at all aggravated since her admission it was deferred until the next morning when the operation was performed for femoral hernia at 12 M. The woman went through the operation without much suffering and with some prospect of relief. A cathartic was administered after the operation which was followed in a few hours by free catharsis of a darkish, fecal matter. The hiccough, however, with occasional vomiting continued till within a few hours of her death, which followed about the fourth day after the operation. No opportunity was afforded for examination after death from the unwillingness of her friends. On the third day the wound was gaping and discharging a saneous fluid of disagreeable gangrenous odor. On removing the straps there appeared in the wound a projection of a livid color resembling a knuckle of intestine which when pressed upon gave so much pain that the lips of the wound could not be brought together. This same discharge continued till death.

It is fitting that we should close with a review of the surgery of aneurysms.[33] The relative frequency of aneurism was undoubtedly due to the prevalence of syphilis.

The case histories need no comment; they picture these early surgeons at the height of their daring and dexterity.

Case Forty-four

Peter Thomas, born in the West Indies, aged 35 years, a black man, was admitted into the New York Hospital January 5, 1813, with an aneurism of the carotid artery situated immediately below the angle of the jaw on the right. He first experienced a pulsating sensation in March but no swelling was at that time visible. Soon after a very small tumor was perceptible on examination which increased in size slowly and gradually until about two months since, when it began rapidly to enlarge. Until this period the progress of the tumor was unattended with pain. He now, however, complained of a throbbing sensation in the head and lately he has been subject to occasional attacks of vertigo. Previous to his admission he had been once bled from the arm and blisters had been applied to the part by some practitioner who appears to have been unacquainted with the nature of the complaint. He is of a plethoric and robust habit and has never labored under any severe illness. His occupation for a considerable period before the discovery of his complaint was that of a laborer attending on masons, and in this capacity he was frequently necessitated to carry heavy loads upon his shoulders, and was often employed at work with his head in a depending position. The dimensions of the tumor at the time of his admission were as follows: Length 6⅛ inches, breadth 4 inches, height or projection of the tumor from the neck 2 inches, half circumference of tumor measured externally 8¼ inches. His pulse being strong and full, 16 ounces of blood were taken from the arm and on the day following a purgative of Sulph. Sodae was administered, and he was put upon a low diet by the direction of Dr. Post. These means had the effect of diminishing arterial action in a considerable degree. On the 7th of January at a consultation of the physicians and surgeons of the hospital, it was agreed that the operation of tying the carotid artery afforded the only hope of safety in this case; the patient acquiescing in this decision, it was performed on the 9th at twelve o'clock by Dr. Post. An external incision was made about three inches in length from the lower part of the tumor to within a small distance above the clavicle; which exposed the inner margin of the sternocleidomastoideus muscle. The dissection was continued cautiously through the cellular texture intervening between that muscle and the sternohyoideus until the sheath containing the vessels became apparent. The artery being then separated from the vein and parvagum, a ligature armed with a needle was passed under it, by means of an eyed probe bent to a suitable curvature for that purpose; this ligature was firmly tied and another introduced in a similar manner and secured about ¾ of an inch above it. The needle with which the first was armed, was then passed through the coats of the artery and secured with another knot in the manner recommended by Mr. Clive . . . afterwards the intervening portion of the vessel was divided with a bistoury. It may be of importance to observe that the artery was one-third larger than its usual size and its coats were uncommonly thickened. The lips of the wound were retained in exact apposition by strips of adhesive plaster and lightly covered with lint; no bandage was employed. Immediately after the first ligature was applied, the action in the aneurism entirely ceased but in a short time, when attentively examined, a pulsatory motion was obscurely perceptible. It was remarked that about three minutes after the ligature was applied, the pulse at the wrist evidenced a sudden diminution both in frequency and force in the circulating system; in five minutes, however, it regained its usual standard. At this period, too, he complained of a pressing or sense of weight on his right inferior extremity and his right arm seemed relaxed and deprived of mobility. The revival of the energy of the circulation, however, was simultaneous with the disappearance of these symptoms.

Three o'clock P.M., the patient complains of oppression about the upper part of the chest, of a pain in the right side of the head, although not as before of the throbbing kind . . . January 10th, 10 o'clock A.M., complains of no pain or uneasiness except in the head. Has slept very well during the latter part of the night. Skin natural, pulse 76, regular and full. Let him be bled to twelve ounces . . . January 12th, the patient early this morning after an attack of coughing was affected with syncope in which state he continued several minutes. On his revival he complained of uneasy sensations about the throat, attended with a difficulty of ejecting the excretions of the fauces. Skin cold and covered with a copious perspiration. Pulse frequent and feeble, appears much exhausted. He was this day directed to take a more nourishing diet. The tumor does not appear as prominent as before; it has a hardened feel and the pulsation is very obscure . . . No union by the first intention having taken place in the wound it begins to suppurate from the whole surface; pulsation in the tumor almost imperceptible . . . The patient rested unusually well last night; he complains of no pain and the cough is much better. The wound discharges a bland and healthy pus and the granulations are big ones. January 21st, still improves. January 22nd, cough less troublesome. Lunar caustic was applied to the wound. The dimensions of the tumor as measured today were as follows: Length 5¾ inches, breadth 3½ inches, projection 2 inches, half circumference 7¾ inches, pulsation still perceptible. January 23rd, improves. January 24th, the upper ligature came away with the dressings. Lunar caustic was again applied. January 26th, the lower ligature came away; the sore has contracted to a small size and discharges but little . . . March 23rd, the sinus has contracted considerably. May 17th, the sinus is entirely closed and the tumor gradually diminishing. Feeling himself perfectly well he was anxious to be discharged, which was accordingly done . . .

Case Fifty-two

Robert McFadden, a native of Ireland, aged 49 years, laborer, was admitted into the New York Hospital October 7, 1814 with popliteal aneurism of the left leg. The limb was somewhat swollen and the tumor about the size of a small hen's egg. The account which the patient gave of the disease was that about fourteen days previously he was suddenly awaked from his sleep by a violent pain in the ham, like a cramp, which lasted for a short time. In carrying his hand to the part he for the first time felt a pulsating tumor . . . A flannel roller was applied to the limb with a compress over the tumor with tolerable firmness. By this means the swelling of the leg was diminished and the patient experienced much less pain in the tumor. Three days after his reception, he again had an accession of fever; the pulse became active and full, accompanied with much pain in the head and loins . . . 29th of October the fever had in great measure disappeared, but the pain in the tumor was very great with redness and much soreness to the touch, the pain shooting down the leg quite to the foot. Pulsation in the tumor less distinct. Pounded ice was directed to be put in a bladder sufficiently large to cover the tumor and kept constantly applied. October 31st, the pain in the tumor and leg has been very much diminished since the ice was used. The fever has entirely ceased and the patient has considerable rest at night . . . 25th, the limb is very much enlarged by edema, including the tumor which has increased in circumference one inch since the 7th inst. It has a slightly livid appearance in the center. The operation of tying the femoral artery was performed this day by Dr. Post in the usual manner excepting that the artery was left undivided . . . Edema of the limb has subsided in great measure, bowels regular. The limb including the tumor has diminished about ¾ of an inch since the 26th inst. 30th, the limb below the tumor is of its natural size. Patient complains of pain occasionally affecting the outside of the heel. The dressing was removed today when it appeared that a perfect union had taken place throughout the whole length of the wound, except at those points where the ligatures were left out, at which parts there is a quantity of well-formed pus discharged. The tumor has undergone a very perceptible diminution and has acquired a very considerable degree of softness. The patient is in every respect better than he was previous to the operation. The functions of the body are performed with perfect regularity . . . About the middle of January, a mortified spot was discovered on the outside of the heel. It was about the size of a shilling piece. This continued to increase until it attained to the size of a half crown piece, it then remained stationary, although the surface was black and sloughy. February 15th, (Previous to this time the slough on the heel had separated and the part had nearly healed). In the evening he had a very violent rigor and the next day considerable fever, pulse full and frequent but not very hard, bowels rather loose. Antimonial powder was given and in the evening he was bled. It was not until three or four days had elapsed that the cause of this disturbance of the system was discovered. Upon the bed clothes being raised to look at the leg, it was found much swollen, erysipelatous and in several places gangrenous. The tumor in the ham had completely suppurated which was evidenced by the fluctuation and other symptoms. The inflammation was in some measure subsided and the sloughs began to separate, but the patient's strength not being sufficient to carry him through, he died on the 3rd of March. The tumor had burst and discharged its contents previous to this period.

Dissection: The sac was in so putrid a state as not to admit of a very minute examination. It was found to communicate with the cavity of the joint which contained pus. The extremities of the bones were slightly carious. The artery, veins and nerve with the surrounding parts at the place of operation were much thickened by inflammation and blended together. The artery contained a coagulum which extended in that portion of it below where it was tied quite to the tumor and in the upper portion to the giving off of the profunda . . .

Case Sixty-four

An Aneurism of the Left Femoral Artery.

The operation was performed at half past two o'clock by making an incision in the integuments of the upper third of the thigh in the direction and on the inner edge of the sartorius muscle. A small branch of artery going to this muscle was divided which was troublesome to secure and rendered the operation more tedious. The artery being detached from the sheath was tied by two ligatures about an inch apart and was divided between them. At the time of applying the ligatures there was no perceptible change in the pulse at the wrist. Three and a half o'clock P.M., August 6th (10th day) removed the dressings—the wound had united except where the ligatures came out. August 13th, the upper ligature and the one by which the small artery was tied were removed. The tumor evidently subsides. August 18th, the lower ligature came away. August 21st, discharge from the wound diminished. September 1st, tumor scarcely perceptible. After this the upper and outer part of the thigh was attacked with erysipelatous inflammation which, however, went off in the course of about ten days . . .

Case Sixty-six

Lydia Hubbard, born in Massachusetts, aged 32 years. Was admitted in the New York Hospital on November 26, 1816 with an aneurism of the right carotid artery, rather larger than a hen's egg; extending from the angle of the jaw to the lower part of the thyroid cartilage. She first perceived the tumor about four years ago. It was then about the size of a nutmeg, situated immediately behind the angle of the jaw and evidently pulsated. Its growth at first was very slow but lately it has increased rapidly and produced a painful throbbing in the head which was considerably increased on making any exertion . . . On the morning of the operation (November 28th) she appeared perfectly tranquil, her pulse was 73, and her composure at this time could only be equalled by the fortitude which she evinced while under the knife. The operation was performed at twelve o'clock by Dr. Post. An incision was made three inches in length on the inner edge of the sterno-mastoid muscle, from the base of the tumor to within a quarter of an inch of the clavicle. The dissection was continued between the mastoid and sternothyroideus down to the omohyoideus and this part of the operation was rendered tedious by the division of two or three small vessels which obscured the parts and which it became necessary to secure. The sheath of the vessels was now laid bare and its further exposure being rendered difficult by the omohyoideus, this muscle was divided. Care was necessary to avoid the descendens noni which ran over the anterior surface of the sheath. The sheath was now laid open and the artery detached. A bent probe carrying a double ligature was passed under it; the lower ligature was tied—about ¾ of an inch of the artery was separated—the upper ligature was now tied and the artery divided between the two by the bistoury. The edges of the wound were retained in coaptation by adhesive straps and covered lightly with lint. At the time of applying the lower ligature the tumor diminished nearly one-half and its pulsations were much less distinct. The pulse at the wrist became fuller and more frequent. The cheek of the affected side lost its bright color and warmth. She experienced a sensation of numbness through the head; this was succeeded in a few minutes by pain, which, however, was of short duration . . . Removed the dressings. The whole of the wound above the upper ligature was united . . . December 6th, pulse 76. Experiences no uneasy sensations. The ligatures with which the small arteries were tied came away. December 13th, says that she feels better and that her head is stronger than it has been for the last year. December 14th, lower ligature came away. December 18th, upper ligature came away . . . January 1, 1817, discharged cured. The tumor is very little more than ¼ as large as it was on the morning of the operation. An indistinct pulsation can yet be felt; whether in the tumor itself or owing to the surrounding vessels, it is difficult to ascertain . . .

Case One Hundred and Seven

Popliteal Aneurism.

Squire Johnson, a boatman, aged 30, entered July 3, 1832. About four months ago observed a swelling in the calf of the right leg and in a few weeks afterwards another in the ham of the same limb. Can assign no apparent cause for either. The first soon subsided but the other already as large as a walnut continued to increase. By pressure it could be easily effaced but it reappeared on removing the pressure. The lower part of the leg became edematous and the patient somewhat lame. At present his health is good but complains of a dull sensation in the affected limb which keeps him awake at night. The tumor when viewed laterally is observed to pulsate. The patient keeps his leg flexed, the tumor occupying the whole popliteal space. July 18th, Dr. J. K. Rodgers took up the femoral artery. As the ligature was tightened the pulsation in the tumor ceased, although the size of the swelling was but little diminished. After the operation the limb became a little cooler than the left. It was rolled in flannel and warm bottles of water were kept at the foot. The limb recovered its natural temperature. It was dressed on the 7th day. Sensation which for a time had been diminished was now restored. The ligature came away on the seventeenth day. On 8th August the patient was discharged cured.

At his dismissal the tumor had nearly disappeared and his right leg in every particular appeared as sound as the other . . .

Case One Hundred and Twenty

Inguinal Aneurism—Ligature of the External Iliac Artery.

Anthony Titus, a mulatto seaman, born in South Carolina, aged 29, came into the New York Hospital December 2, 1833. Twelve or fourteen months ago he was affected with rheumatic pains in different parts of his body—his knees, right hip, breast and shoulders. Since that time he has not been to sea but has worked at the quay in hoisting out coal from a vessel. While engaged in this occupation last August, the pain settled in his back, gradually increased and at length shifted into his right groin. In a few days he felt a lump there which pulsated. It grew larger and finally becoming inconvenient from its size, obliged him to leave off work. Three weeks ago the thigh and leg began to swell, pain increased shooting down the inside of the thigh. For a week past the aching has been very severe, limb feeling as if it were about to drop off. The whole limb is very much enlarged and edematous—it measured 26½ inches in circumference at its largest part while the other limb is but 19½ round at the same place. When the patient is standing the integuments are firm and tense—they become softer when he lies down. A pulsating tumor about the size of an orange is seen at the upper part of the thigh near the groin. The tumor is distinctly circumscribed and extends up to a level with Poupart's ligament. The aneurism is situated in the femoral artery. A roller was passed round the limb from the foot to the middle of the thigh. This increased the force of the pulsation in the aneurismal swelling. Next day the bandage was loose from the diminution of the size of the limb . . . December 6th, at 12 N. the operation was performed by Dr. Cheesman; Drs. Mott, Rodgers and Stevens being present, together with a large concourse of students. An incision beginning within the anterior superior spinous process of the ilium and extending in a semi-circular direction to the margin of the external abdominal ring was made through the integuments and afterwards through the muscle. The finger was then used to separate the parts covering the artery—the sides of the wound kept apart by curved spatulas. A small part of the artery freed from its attachment and a strong silk ligature passed under it with the aneurismal needle. This is a blunt curved needle having two eyes and fixed into it a handle by means of a screw—the eye nearest the hand serving for the ligature and the one near the point for receiving a hook similarly fixed on a handle by which the needle and ligature is drawn out. Some difficulty arose in passing this under from its having been loose in the handle. One that screwed on more firmly was substituted and the ligature was passed with ease. When the knot was drawn pulsation immediately ceased in the tumor and the patient manifested some signs of uneasiness particularly about his chest. Two stitches were taken in the integuments and the lips of the wound fastened by straps over which lint was placed—a figure of eight bandage around the loins and thigh. He was carried to his bed and ordered to take a little warm tea and toast. About four o'clock the foot was somewhat cold and the limb of a rather lower temperature than the other. The foot was enveloped and flannels and hot bricks applied to it . . . 8th, pulse full, frequent and rather hard. Much soreness about the wound. Bled to 10 ounces, breast relieved, to take antimonial solution. In the evening the dressing was removed and the wound found to be perfectly and evenly united. Six leeches were applied and a large poultice laid over the abdomen. Some Senna and salts which he took about noon had operated once or twice . . . 29th, ligature came away with gentle pulling about noon. It appears to have been entirely detached by the suppuration. The noose was large enough to admit the head of a pin. Has rather more soreness about the wound than usual and the soreness has rather extended. Considerable matter flows from the upper orifice. A bread and milk poultice to be applied . . . 31st, the aneurismal swelling in the groin was observed to have disappeared entirely, so that nothing could be found of it. The discharge is becoming more white and purulent. Poultices continued.

This case developed a bilateral parotitis and although the case report is not complete a fatal outcome from sepsis probably ensued.

We have found it stimulating to review the work of our predecessors of over a century ago. These men were among the pioneers in American surgery. The New York Hospital was the cradle of surgical development and teaching in America. The early days in its history were signalized by thrilling events. Its part in the War of the Revolution has been referred to. One other incident is worthy of note:

The "Doctors' Mob" made itself famous on Sunday, April 13, 1788. While the dissecting was under way, a boy peeped in at the window, and some jocular individual who spied him from the room waved a dead arm at him, so the boy said. At any rate, he was duly impressed, and confided his experience to whomsoever would hear him, with the result that an angry crowd tried to take over the custody of the building and break up the anatomical course. The students and doctors thought it prudent to run away, and found sanctuary in the jail, with the mob after them. Then John Jay came upon the scene, exactly how or why does not appear; and peppery old Baron Steuben, and Mayor James Duane, reading the riot act, backed by a handful of militia. The mob proceeded to hustle the dignitaries and knocked down Baron Steuben, who lost his temper and called out, "Fire, Duane, Fire!" The militia fired, seven rioters were killed, many were wounded, and the rest went home. That was the famous Doctors' Mob, and the doctors got no sympathy.[34]

REFERENCES

The writers are indebted for the biographical notes to Fielding H. Garrison's History of Medicine (Ed. 4, 1929); the Narrative of Medicine in America by James Gregory Mumford (1903); and to George L. Rives, author of the Biographical Catalogue descriptive of the Portraits belonging to The Society of the New York Hospital, 1909.

1. Clinical thermometry: Wunderlich of Wurttemberg wrote "Treatise on the

Relations of Animal Heat in Disease," 1868, which is the foundation of our present clinical thermometry. (Garrison, F. H. An Introduction to the History of Medicine. Ed. 4, Phila., Saunders, 1929, p. 430.)

2. Stethoscope invented by Laënnec in 1819. He published "Traité de l'auscultation Médiate" in 1819 and 1826. (*Idem*, p. 411.)

3. Dr. C. W. Long used ether anesthesia 1842–1843. In 1844 Horace Wells, a dentist, began to use nitrous oxide in dentistry. W. T. Morton and C. T. Jackson July, 1844: Morton successfully administered ether anesthesia at the Massachusetts General Hospital October 16, 1846. (*Idem*, pp. 505–506.)

4. The Chirurgical Works of Percivall Pott F.R.S., Surgeon to St. Bartholomew's Hospital, with His Last Corrections. 1st American, From the last London edition, 2 vol., Phila., 1819.

5. The Institutes and Practice of Surgery, being the outlines of a course of lectures by William Gibson, M.D., Professor of Surgery in the University of Pennsylvania, etc. Phila., 1824.

6. *Idem*, p. 184.

7. The Surgical Works of John Abernethy, F.R.S. London, 1811.

8. GIBSON, W. *Op. cit.*, 1: 258.

9. *Idem*, p. 281.

10. *Idem*, pp. 277–278.

11. *Idem*, p. 274.

12. The First Lines of The Practice of Surgery, being an Elementary Work for Students, and a Concise Book of Reference for Practitioners. Part I. General Surgical Subjects. Part II. Particular Surgical Subjects. By Samuel Cooper, Member of The Royal College of Surgeons; Fellow of The Medical Society of London; and Author of Critical Reflections on The Cataract. 2nd American, with an appendix from the 3rd London Edition. Hanover, 1815.

13. A System of Surgery, by Benjamin Bell, Member of The Royal College of Surgeons of Edinburgh and Ireland, One of the Surgeons to The Royal Infirmary and Fellow of The Royal Society of Edinburgh. Ed. 7, Edinburgh, 1801, 1: 405–409.

14. "When a locked jaw is produced by a wound in any of the extremities, if the disease does not yield to the remedies that I have mentioned, it has been proposed to amputate the limb; and in various cases this has been done. I am sorry, however, to observe that we have scarcely an instance of the operation proving useful: For in this disease, as in almost every spasmodic affection, the effect is apt to remain after the cause is removed." (Bell, B. *Op. cit.*, 1: 412.)

15. Bell writes: "By due attention to regimen, particularly by a proper allowance of wine, more real advantage is commonly obtained, than we ever experience from the whole tribe of stimulating warm cordials." (*Op. cit.*, 1: 99.)

16. This case was reported on page 55 of "The Medical & Surgical Register, consisting chiefly of cases in the New York Hospital by John Watts, Jun. M.D., Valentine Mott, M.D. and Alexander H. Stevens, M.D.," N. Y. 1818, the first work of this description ever attempted in this country. In this register is ~~included Mott's~~ "Reflections on securing in a ligature the arteria innominata, to which is added a case in which this artery was tied by a surgical operation." May 11, 1818.

17. "Of preventing or diminishing pain in Chirurgical operations . . . the pain indured by operations may be lessened in different ways: By diminishing the sensibility of the system; and by compressing the nerves that supply the parts upon which the operation is to be performed. Narcotics of every kind might be employed for the purpose of lessening general sensibility; but nothing answers this with such certainty and effect as opium. But as opiates, when given in doses large enough for this purpose, are apt to induce sickness and vomiting, I seldom venture on giving them before an operation, unless the patient has previously been in the habit of using them." (Bell, B. *Op. cit.*, 7: 377.)

18. COOPER, S. *Op. cit.*, p. 176.

19. *Idem*, p. 46.

20. *Idem*, p. 178.

21. Gibson, W. *Op. cit.*, 7: Chap. xvi, 509–510.

22. *Idem*, 2: 524.

23. Pott, P. *Op. cit.*, Remarks on Amputation, 2: 308.

24. Gibson, W. *Op. cit.*, 1: 138.

25. *Idem*, Amputation, 2: 510.

26. "Issues are small artificial ulcers that we form in different parts of the body, for the purpose of procuring a discharge of purulent matter . . . Issues may be formed in various ways: By corroding or removing the skin with epispastic application; by making an incision with a scalpel or lancet; by the application of caustic; and the introduction of a cord." (Bell, B. *Op. cit.*, 7: 363.)

27. Technique of seton: "An opening sufficiently large for the cord, being made with a lancet in the upper part of the abscess, the director, threaded with a cord of candlewick cotton, or soft silk, proportioned in thickness to the size of the tumor, is then to be introduced, and its point pushed downwards till it is felt externally at the most depending part of it. The director being kept firm by an assistant, an incision is to be made with a scalpel upon its under extremity, of a length somewhat more considerable than the opening first made by the lancet; for when this is not done, and when the under orifice is not larger than the upper, the matter is very apt to transude above . . . The director is now to be pushed downwards, with so much of the cord as to leave two or three inches out at the lower orifice . . . a regular and slow discharge of matter is thus produced . . . It answers particularly well in all glandular collections of matter, where the admission of air proves highly pernicious." (Bell, B. *Op. cit.*, 1: 78.)

28. "Mott's amputation at the hip joint was supposed at the time (1824) to have been the first case of the kind in America. However, Brashear of Kentucky had done the operation in 1806, but his case had not been published." (Mumford, James Gregory, A Narrative of Medicine in America. Phila., 1903.)

29. Gibson, W. *Op. cit.*, 1: 318.

30. Cooper, S. *Op. cit.*, p. 332.

31. *Idem*, p. 300.

32. Pott, P. *Op. cit.* 1: 336–337.

33. Gibson, W. *Op. cit.*, Aneurism (Vol. ii): " . . . Restrict the meaning of true aneurism to that condition of an artery in which all its coats are uniformly dilated, or else the internal and middle coats ruptured while the cellular coat remains entire." (P. 108.)

"... I think, that the theory broached by Sennertus, and supported with so much ingenuity by Scarpa, will be found to afford the true explanation of the phenomena usually met with in the generality of aneurismal tumours—that the internal and middle coats are ruptured or destroyed, and that the sac is formed by a dilation of the external coat." (P. 110.)

"... true aneurism is never produced without a previous morbid condition of the coats of the vessel in which it is seated. This morbid change of structure has been already noticed as connected with calcareous deposition, or with the formation of atheromatous matter between the internal or middle coats . . . External aneurism is the result of sudden and violent extension or flexion of a limb, while the internal is produced by lifting heavy weights." (P. 112.)

"The ligature, then, may be considered as the only mode of operation upon which any great reliance can be placed in the treatment of aneurism, and this, too, frequently fails." (P. 116.)

Consult also Medical and Surgical Register for Ligature of Innominate Artery, by Valentine Mott.[16]

34. Mumford, J. G. *Op. cit.*

SAMUEL JOHNSON'S MEDICAL EXPERIENCES

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TO admirers of Samuel Johnson's intellectual attainments it may perhaps seem a gross material sacrilege to discuss his physical disabilities. But it is hardly necessary to labour the argument that every side light on this great personality should be explored. Johnson was of opinion that "all knowledge is of itself of some value. There is nothing so inconsiderable that I would not rather know than not," and spoke freely and in some detail about his ailments. Thus he remarked, "My diseases are an asthma, a dropsy and, what is less curable, seventy-five," and in truth he had others, some of which fortunately he did not realize. About 1778 he wrote to his old friend Dr. Edmund Hector of Birmingham, "My health has been from my twentieth year, such as has seldom afforded me a single day of ease," and his letters to Mrs. Thrale, of which more than two hundred originals were publicly sold in January, 1917, contain many references to his bodily ills, and even to his "sarcocele."

Acting on the principle of Terence's line, "Homo sum; humani nihil a me alienum puto," Johnson had a catholic interest in his fellows. He was "a great dabbler in physic," and, being, as E. S. Roscoe says, preeminently a teacher of the art of living, he undauntedly invaded its sacred realms, not only by writing the proposals for, and articles now difficult to identity in, Robert James' "Medicinal Dictionary" (1743) in three folio volumes, but by giving advice, criticizing to his friends the treatment their doctors adopted, and, on occasion, by prescribing. To the rheumatic Bennett Langton he sent a prescription for sulphur, mustard seed, sugar and infusion of the root of lovage. He instructed Mrs. Thrale about the treatment of her husband in 1780, and in 1771 advised her to take the aperient waters of St. George's Spa in the grounds of "The Dog and Duck" tavern (hence "Dog and Duck Waters") on the site now occupied by Bethlem Hospital, St. George's-in-the-Fields. He also gave Mr. Perkins (Thrale's manager and one of the founders of Barclay and Perkins' brewery) directions for a journey undertaken in 1782 in search of health, laying much stress on banishing all worry and anxiety, for he followed Dr. Frank Nicholls (1699–1778), the author of "De Anima Medica Praelectio" 1750) in believing that mental disturbance would prevent medical treatment from attaining its object. His friend Thomas Lawrence (1711–83), President of the Royal College of Physicians of London (1767–1775), after an attack of hemiplegia and aphasia in March, 1782, got edema of his paralyzed hand, and for this Johnson recommended electrical treatment. In 1783 he did not hesitate to write to a fellow sufferer, the Reverend Dr. J. Taylor, "It does not appear from your Doctor's prescriptions that he sees to the bottom of your distemper," and accordingly he went on to dictate that a regulated diet and in particular milk were more likely to be beneficial than physic. He recommended Miss Boothby to take a special mixture made from powdered dry orange peel for her dyspepsia, and, though a layman, was in advance of his medical contemporaries in disapproving of routine blood letting. After his attack of paralysis and loss of speech blisters were applied to the back and neck, and he "compelled the apothecary to make his salve according to the Edinburgh Dispensatory, that it might adhere better; I have now two on my own prescription." When at Montrose in 1773 and in need of medicine he wrote out the prescription in technical characters. On December 11, 1784, two days before his death, his legs were incised for dropsy; Johnson, always willing to suffer pain if he could thereby obtain relief, upbraided his medical friends in attendance for undue anxiety about their professional reputation; they included the famous William Heberden, the elder (1710–1801), whom on a previous occasion he had sent for as "Ultimus Romanorum, the last of the learned physicians," but now reproached as "timidorum timidissimus." Of the words connected with medicine in his Dictionary C. W. Burr has given an interesting account, and after quoting Johnson's definition of a surgeon, "One who cures by manual operation: one whose duty is to act in external maladies by the direction of the physician," adds the comment, "Some physicians think it would be a proper penance for professional conceit if modern surgeons were compelled to read this definition daily." The anonymous author of a pamphlet, ascribed to John Callander, the Scottish Antiquary, and printed in Edinburgh, entitled "Deformities of Dr. Samuel Johnson Selected from his Works"[1] fell foul of nearly everything Johnson wrote, including the medical words in the Dictionary; but this critic rather overreached himself in commenting on the definition of tympany as "a kind of obstructed flatulence, that swells the body like a drum," in the following words, "Flatulence is not inserted, but flatulency is said to be 'windiness; fulness of wind.' And what does he mean by an obstructed fulness of wind, or by his elegant simile of a drum." It may here perhaps be not without interest to quote from "The Cambridge Tart: Epigrammatic and Satiric-Poetical Effusions; etc., etc., Dainty Morsels, Served up by Cantabs, on Various Occasions."[2] Here is found the following epigram, with translation, by Richard Porson "On the Publications of Mrs. Thrale, Mr. Boswell, and Sir John Hawkins [author of "The General History of the Science and Practice of Music," 1776], on the subject of Dr. Johnson:"

Lexiphanem fatis functum, quo foemina, qua vir
  Certant indignis dedecorare modis,
Hic quantum in Scotos fuerit testatus amorem
  Enarrat, fatuos vendidit illa sales.
Fabellas eques ede tuas, seu Musice mavis,
  Si famae Herois vis superesse nihil.

At Johnson's death both sexes join,
His character to undermine;
Proclaim his courtesy to Scots,
And print his stupid Anecdotes;
'Tis now thy turn musician Knight,
Publish and damn his fame outright.

Johnson's acquaintance with medical men was extensive, ranging from the President of the College of Physicians, Heberden, Percivall Pott (1714–88) Master of the Corporation of Surgeons (1765) to Robert Levett, who early in life took a liking to surgery, and as a waiter in a Paris café was by the good offices of the medical clients enabled to walk the hospitals, and was for thirty-six years a member of Johnson's queerly assorted and somewhat quarrelsome household; he had a practice "in physic among the lower people" from Marylebone to Houndsditch. The gratuitous services of Johnson's medical advisors engendered a very high opinion of the self-sacrificing generosity of the profession which he freely expressed on many occasions. It is noteworthy that medical men were well represented in the Ivy Lane Club of which he was the moving spirit and dictator, and that he defined a club as "an assembly of good fellows meeting under certain conditions." On the other hand in *The Idler* of August 5, 1758 he did not manifest any enthusiasm for experimental physiology in the reflections that:

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[1] London, 1782. Ed. 2, 8vo, pp. ix + 89.

[2] 1823, p. 269.

> Among the inferior professors of medical knowledge, is a race of wretches whose lives are only varied by varieties of cruelty, whose favorite amusement is to nail dogs to tables and open them alive . . . The anatomical novice tears out the living bowels of an animal, and styles himself physician, prepares himself by familiar cruelty for that profession which he is to exercise upon the tender and helpless . . . I know not, that by living dissections any discovery has been made by which a single malady is more easily cured.

This is very sad from such a future friend of the profession, but no doubt his tender heart for animal suffering was responsible for language which we expect from modern antivivisectionists.

When corresponding with his medical friends on his own ailments Johnson did so in Latin; this custom made a rather unfortunate start: in 1729 Dr. Samuel Swinfen, his godfather and probably the first doctor he consulted about his mental depression, was so struck with the ability of Johnson's exposition that he showed the letter to others and thus brought down on his head the patient's wrathful indignation at a breach of professional conduct. In his final illness he kept an account from July 6 to November 8, 1784 in Latin of his symptoms under the title "Aegri Ephemeris." Johnson had definite views on medical conduct; thus he insisted that a doctor should always tell his patient the truth, and that it was wrong to deceive a sick man for fear of alarming him. When on his deathbed he insisted on having the truth from Dr. Richard Brocklesby who, it may be mentioned, was buried in St. Clement Danes Church where the Johnson Club holds a memorial service annually on December 13, the day of Johnson's death. On January 19, 1775 James Boswell wrote to Johnson and on February 7, obtained a somewhat lengthy opinion on the relation of the titles "Physician" and "Doctor of Medicine" for use in the Court of Sessions when defending the Managers of the Royal Infirmary, Aberdeen, against Dr. John Memis. This St. Andrews graduate's complaint was that he was termed "Doctor of Medicine" instead of "Physician," the first title being applicable only to the recently qualified and before they entered on practice. Johnson, with the support of Thomas Lawrence, then President of the Royal College of Physicians of London, was able to give Boswell the opinion he wanted, namely that the title of "Doctor of Physic" is the highest that a medical practitioner can have as it implies not only physician but a teacher of medicine. Dr. Memis' case was determined against him with £40 costs.

NECROPSY

The question has been raised why a post-mortem examination of his body was made, and it has been suggested that it was thought advisable to obtain evidence that death was due to natural causes, because, as a result of his action in incising his legs on the morning of the day he died, rumours got about that he had committed suicide.

The following details of the post-mortem examination on Samuel Johnson were copied in 1891 from the manuscript account by James Wilson, F.R.S. (1725–1821), who carried it out. The book containing this record, now in the Royal College of Physicians of London, was then in the possession of the late W. H. Dickinson (1832–1913) who was senior physician when I was the junior assistant physician at St. George's Hospital; he was a kind of medical Johnson, big in body, plagued by the gout, a writer of Addisonian English, the author of many terse sayings, an outspoken critic and a fearless opponent with a somewhat abrupt and dogmatic manner. His son, Lee Dickinson (1862–1904), also my colleague at St. George's Hospital, who gave me this opportunity, was the great-grandson of James Wilson. This account has been published by Squibb (1849), by Chaplin (1919), by the late Sir Frederick Treves (1924), and by myself (1924). It is headed "Asthma:"

> Wednesday, December 15th, 1784, opened the body of Dr. Samuel Johnson for Mr. Cruikshank, in the presence of Drs. Heberden, Brocklesby, Butter, Mr. C., and Mr. White. He died on Monday evening preceding. About a week before his death Mr. C., by desire of his physicians, scarificed his legs and scrotum, to let out the water which collected in the cellular membrane of those parts, Dr. Johnson being very impatient to have the waters entirely gone. On the morning of the day on which he died he repeated the operation himself and, cutting very deep, lost about ten ounces of blood; he used a lancet for this purpose; he was in too weak a state to survive such an apparently trifling loss. For several years past he had been troubled with asthma, for which he commonly used to take opium, and found that nothing else was of any service to him; he had discontinued, however, this practice some years before he died. It was really a few *days* only before his death (vide p. 546).
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> On opening into the cavity of the chest, the lungs did not collapse as they usually do when air is admitted, but remained distended, as if they had lost the power of contraction; the air-cells on the surface of the lungs were also very much enlarged; the right lobe adhered very strongly to the diaphragm; the internal surface of the trachea was somewhat inflamed; no water was found in the cavity of the thorax. The heart was exceedingly large and strong, the valves of the aorta were beginning to ossify; no more fluid than was common was contained in the pericardium. In the abdomen seemed to be incipient peritoneal inflammation and ascites; the liver and spleen were firm and hard; the spleen had almost the feel of cartlidge. A gall stone about the size of a pigeon's egg was taken out of the gall bladder; the omentum was exceedingly fat; nothing remarkable was found in the stomach; the folds of the jejunum adhered in several places to one another; there was also a strong adhesion by a long slip between the colon and bladder; the pancreas was remarkably enlarged; the kidney of the left side tolerably

good, some hydatids beginning to form on its surface; that of the right side was almost entirely destroyed, and two large hydatids formed in its place. Dr. Johnson never complained of any pain in this part; the left testicle was perfectly sound in structure, but had also a number of hydatids on its surface, containing a fatty gelatinous fluid, the right testicle had hydatids likewise, but the spermatic vein belonging to it was exceedingly enlarged and varicose. The cranium was not opened.

N. B. Mr. White, assisting me to sew up the body, pricked his finger with the needle; next morning he had red lines running up his arm, and a slight attack of fever.

In the manuscript there are queries after the words "hydatids," but they appear to have been added by a later hand, as the ink is darker. It should be remembered that the common renal cysts were not recognised as distinct from the rare hydatid cysts until 1793, when Matthew Baillie brought out his remarkable book on morbid anatomy. Squibb stated that the right kidney was taken away by Mr. (subsequently Dr.) White and so may be still preserved. In Squibb's and in some other copies of this post-mortem record the gall stone is described as "about the size of a pigeon's head" instead of "a pigeon's egg;" Sir John Hawkins in his "Life of Johnson"[3] says that the gall stone was of the size of a common gooseberry, and that the liver was "schirrous," which might mean cirrhosis, and if so, goes further than Wilson's description of "firm and hard," or might perhaps refer to the thickened capsule, for hepatic cirrhosis is rarely associated with simple chronic peritonitis of an advanced degree such as the cartilaginous feel of the spleen might justifiably suggest. Birkbeck Hill[4] quotes from Wyndham's "Diary "Vesicles of Wind were found on the lungs (which Dr. Heberden said he had never seen, and of which Cruikshank professed to have seen only two instances)." According to John Latham the plate showing "enlargement of the cells" (emphysema) of the lungs in the atlas (1799) supplementing Matthew Baillie's "Morbid Anatomy of some of the most important Parts of the human Body" (1739) was drawn from one of Johnson's lungs. The only illustration (Fig. 1, Plate VI) of this condition in the series of plates does not present any obvious bullae projecting from the pleural surface, which, however is rather sketchily drawn, the attention of the artist, William Clift, and of the engraver, William Skelton, having been concentrated on the cut surface. It is reproduced in Dr. Charles Singer's "Short History of Medicine."[5]

The interpretation of these morbid changes would appear to be long-standing high blood pressure with subsequent renal disease (chronic interstitial nephritis), the kidneys showing an excessive degree of cystic change. In Leslie Stephen's life of Johnson in the "Dictionary of National Biography" the kidneys are said to have been granular, a deduction which seems highly probable, and very likely may have been suggested by the late Sir Norman Moore, who was a friend of Leslie Stephen's, and was closely associated with the "Dictionary of National Biography" from its start. Apart from the commencing "ossification" of the aortic

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[3] HAWKINS, SIR JOHN. Life of Johnson, Ed. 2, 1787, p. 593, 1898.

[4] HILL, BIRKBECK. Johnsonian Miscellanies, 2: 388, 1897.

[5] 1928, p. 158.

valves, there is not any direct evidence of general arterial change which in some degree would be expected in a healthy man (and this Johnson was not) of seventy-five. The exceedingly "large and strong" heart without any mention of valvular disease, except of the aortic segments, points to high blood pressure and renal disease. The condition of the peritoneum, and especially the cartilaginous feel of the spleen, probably due to chronic capsulitis, may be regarded as the result of the simple chronic peritonitis that may accompany chronic renal disease and arterial degeneration. The enlargement of the pancreas was probably due to engorgement of cardiac origin. The description of the lungs admirably fits emphysema which would be largely explained as the result of the asthmatic attacks.

The most prominent features in his medical history were a lifelong tendency to melancholia, recurrent asthma in his latter years, an attack of right-sided hemiplegia with aphasia and slight agraphia, and finally dropsy.

MENTAL DEPRESSION

Mental depression, probably inherited with other characters from his father, who was of "a large and robust body and of a strong and active mind but was addicted to a vile melancholy," pursued him throughout life, becoming intensified from time to time. In 1729, when twenty years of age, he was so seriously affected that he often walked the thirty-two miles from Lichfield to Birmingham and back in the hope of relief; in 1764 when fifty-five years old he suffered severely, and this recurred on and off, there being special notes in Boswell's "Life" about depression in 1766, 1768, 1773, 1776, and 1777. His dreadful bouts of melancholy were accompanied by remorse for venial or fancied sins and by fear of madness or of death; Dr. Samuel Swinfen's singularly injudicious remark made to him at the impressionable age of twenty that the melancholia would probably terminate in madness was most harmful, for it seems to have left a lasting impression, and by autosuggestion to have been responsible for the dread of insanity. He fought the infliction courageously by work, exercise, and other methods of distraction, especially conversation, which he definitely distinguished from mere talk. In addition to these remedies he advised Boswell and other perhaps more genuine sufferers from what the great George Cheyne called the "English malady," in his treatise of "Nervous Diseases of all kinds as Spleen, Vapours, Lowness of Spirits, hypochondriasis and Hysterical Distempers" (1733), to be moderate in food and drink and especially to avoid alcohol at night. Johnson, it must be admitted, did not consistently set this example: sometimes most abstemious, he was at other times a voracious eater and copious drinker, and when not a total abstainer would act on his maxim "Claret for boys, port for men, brandy for heroes, "preferring the latter as it did its work (of intoxication) most rapidly, and so, as he said, enabled him "to get rid of myself; to send myself away." He well described his disposition in the words "abstinence is as easy to me as temperance would be difficult." His strength of mind in becoming a teetotaler when advised after illness to do so was remarkable; from 1736 to 1757 and for the last twenty years of his life, except on special occasions, he confined himself to water, lemonade, and tea. It is, however, rather startling to find him described by his admirer the Reverend J. Hay as the first total abstainer. Johnson's love of society was thus a means of getting free from his own thoughts and depression, for he felt that "the great business of life was to escape from himself," and, as Sir Joshua Reynolds said, "Solitude to him was a horror;" thus when at Brighton in 1782 with Mrs. Thrale and Fanny Burney he rather ungallantly explained why he accompanied them to a ball by the resigned dictum, "It cannot be worse than being alone." His frankly expressed fear of death not because of annihilation or of pain, for, as Hollins says, there never lived a man more fearless of pain; it was hell that he dreaded. This has been thought to be morbid, but perhaps his courage in speaking freely and his downright manner, for example in the statement that the whole of his life is "but keeping away the thoughts of death," may have led to an exaggerated impression of his real mental attitude. Psychological studies of Johnson have naturally not been wanting; in 1854 Vieillard and Dumont dedicated a brief memoir on obsessions and hypochondriasis to Johnson as a life-long victim, and in 1857 Dumont wrote a feuilleton "Sur l'état pathologique de Samuel Johnson" dealing rather fantastically with the morbid psychological aspects which he discovered in Johnson and explaining them by early struggles with the adverse conditions of disease, destitution and disappointment. Dumont also analysed his own prolonged sufferings from *névrose cérébrale* in a remarkable volume of 600 pages which has been compared with J. J. Rousseau's "Confessions."

ASTHMA

In 1712, when two and one-half years old, he caught cold and had a bad cough on the way back from London where he was touched for the King's Evil or tuberculous glands in the neck; but otherwise there is not any record of respiratory trouble until 1755 when at the age of forty-six he had laryngitis and was bled three times to 36 ounces. There is then an interval of seventeen years, until 1772, when he had a winter cough which recurred in 1774 and in February 1777, his breathing in the last attack being so much embarrassed that he was bled to 36 oz. in three days, and indeed repeated this on his own account by opening the venesection wound. After further attacks in 1778 he improved, and on June 18, 1779 wrote that he had got rid of the "convulsions" in his chest which had troubled him for twenty years. But in the winter of 1781-1782 he was much troubled by asthma, and in spite of his objection to routine venesection was bled three times in February; for the remainder of his life he was frequently laid low with attacks described under the name of asthma; in the winter of 1783-84 this, combined with edema of the feet and legs, kept him in the house for many weeks (vide p. 548). In 1783 he began on medical advice to take opium, with great relief, and at one time the dose had risen to 3 grains daily; but when a few days before his death he extracted the hopeless prognosis from Dr. Brocklesby he gave up the struggle and all medicine, including opiates. Though speculation is tempting, it is difficult to decide about the nature of his asthma. In 1772 Johnson may have had bronchitis with asthma as a result from bacterial sensitization, and the interval of freedom in 1780, followed in the winter of 1781–82 and for the rest of his life by difficulty in breathing, might conceivably mean that the character of the asthma had changed or become mixed and complicated by the addition of renal or cardiac asthma, possibly of both. As he almost certainly had granular kidneys, a dilating heart and emphysema, there is an organic basis for asthmatic paroxysms of more than one category.

HEMIPLEGIA AND APHASIA

On June 16, 1783 Johnson sat without undue fatigue for his portrait (which he afterwards called "a grimy ghost") to Miss Frances Reynolds, sister of Sir Joshua, and in the evening was very comfortable and cheerful; but at 3 next morning he woke, sat up, and after a feeling of confusion and indistinctness in his head lasting about half a minute had the alarming shock of finding himself aphasic. In his fear that his mind would be affected, he prayed that however his body might be afflicted his understanding should be spared; and, much like Sir Walter Scott in similar circumstances, tested his mental capabilities by translating his prayer into Latin; this brought comfort, for though the lines were not very good he recognised this and made them easily, so that he was assured that his faculties were unimpaired. As "wine has been celebrated for the production of eloquence" he took 2 drams but without effect on the aphasia, though he dropped off to sleep. When seen by Heberden and Brocklesby there was facial weakness on the right side, but the hemiplegia must have been slight, for next day he wrote, "Though God stopped my speech, he left me my hand." There was, however, some agraphia, for he added, "in penning this note I had some difficulty; my hand I know not why, made wrong letters." Recovery was rapid and complete, and these symptoms never recurred. Whether the attack was due to a small hemorrhage or thrombosis or was uremic and due to localized spasm of arteriosclerotic cerebral arteries, akin to that of Raynaud's disease (which has been given as an explanation of recurrent slight strokes by Peabody, Parker, Russell, Osler and others), cannot be settled, as Johnson's brain was not examined; but a small vascular lesion cannot be excluded.

DROPSY

Dropsy was first noticed in June, 1783 by Sir Lucas Pepys (1742–1830), who was afterwards described by J. F. Payne as having "proceeded with unvarying success along the path of honour as hospital physician, society physician, and court physician." Pepys was driven to expostulate with his strong-willed patient, saying, "Sir, if you were tractable I would prescribe for you." In September he had a hydrocele, like his contemporary John Wesley (1703–1791), which did not greatly concern him until a puncture drew blank and a diagnosis of a solid testicular growth or sarcocele was made by Percivall Pott in consultation with William Cruikshank (1745–1800) and excision, or in Johnson's own phraseology "amputation," recommended. Cruikshank, however, was more afraid than the patient of the operative shock, and during the delay "the sarcocele ran off at an orifice made for mere experiment" as Johnson wrote to Reverend Dr. J. Taylor. In the following October the edema extended to the thighs and in February, 1784 a further increase after a severe attack of asthma was so extensive that Johnson commissioned Boswell to obtain the opinion of five leaders of the profession in Edinburgh: Sir Alexander Dick, Drs. Gillespie, William Cullen, John Hope and Alexander Monro *secundus*, who were at a disadvantage in giving an opinion without seeing the patient or consulting with those in attendance. They unanimously recommended squills, which Johnson took with vigor; the only other prescription given, as far as is known, was for rhubarb, then a rare and highly priced drug, from the garden of the octogenarian, Sir Alexander Dick. This, Boswell was to convey to London; but whether or not Johnson took it remains uncertain. It was perhaps due to the seniority of the Edinburgh consultants that digitalis was not recommended, for it had appeared in the Edinburgh Pharmacopoeia of 1783 after Dr. Stokes of Stourbridge in 1779 had brought before the Medical Society of Edinburgh the results obtained by Withering who, however, did not bring out his "Account of Foxglove and its Medicinal Uses with Practical Remarks on Dropsy and Other Diseases" until 1785. Hutchison suggests that digitalis may have been the stock in trade responsible for the reputation of curing dropsy enjoyed by an irregular practitioner called Dallaway, but Johnson, though urged by a friend, declined to consult him, saying that it was too late. Irregular practitioners did not appeal to him, for he spoke of John Taylor (1703–1772), the notorious quack in eye diseases, as the most ignorant man he ever knew. He, however, had such a firm belief in squills that on one occasion he gave himself an overdose with unpleasant results, and thereafter asked Heberden's advice before dosing himself. About March 16, after a day of solitary prayer, humiliation and fasting, he had a urinary crisis, passing 20 pints of urine, and becoming free from the dropsy which had kept him indoors for one hundred twenty-nine days; this he ascribed to prayer rather than treatment. For a time he was so much improved that in June he went to Oxford and travelled about, visiting Ashbourne and Lichfield; probably as the effect of these exertions on a tired and much tried heart the dropsy began to return, and, though controlled by drugs and rest until November, then progressively advanced so that he was obviously nearing his end. On December 11 the edema was so enormous that his legs were incised by "the sweet-blooded" William Cruikshank, but Johnson thought so inadequately that on the morning of his death he got a lancet from his negro servant Francis Barber and cut more deeply so that some 10 oz. of blood came away.

Tuberculosis Glands

As already mentioned, at the age of two and one half, on the advice of Sir John Floyer (1649–1734) of Lichfield (whom he afterwards, perhaps for his own comfort, spoke of as having "panted on to ninety" with asthma), he was touched for the King's Evil, or tuberculous glands in the neck, by Queen Anne at St. James's Palace on March 30, 1712; and together with two hundred others was among the last to go through this form of treatment, effective, if at all, by suggestion. But it was a failure in his case, perhaps because he was of too tender an age to be sufficiently impressed; for the scars of tuberculous abscesses were prominent and disfiguring, and according to Boswell "hurt his visual nerves so much that he did not see at all with one of his eyes, though its appearance was little different from that of the other."

IMPAIRED VISION

Like many literary men, and especially Samuel Pepys, he suffered much from impaired vision; thus Fanny Burney spoke of him as looking at books on the shelves of her father's library and "almost touching the backs of them with his eyelashes as he read their titles." His short sight would explain his remarkable lack of interest in pictures, sculpture and architecture, and has been said, though this seems unlikely, to render it probable that he never saw his wife's face. According to the late Sir Frederick Treves the cause of his visual defect was leucomatous change in the corneae following tuberculous keratitis, which may be correlated with the tuberculous glands in the neck. In spite of treatment of the corneal ulceration by a seton in the neck, the sight of the left eye was entirely lost. The question whether or not there was in addition the factor of an uncorrected error of refraction may reasonably be raised, for he was markedly myopic and did not wear spectacles (invented about the end of the 13th century). It may be mentioned that Johnson appears to have been unduly sensitive on this point, for he vigorously resented as the acme of rudeness being called shortsighted by the Reverend Dr. Thomas Percy, Bishop of Dromore, and was displeased with his friend Sir Joshua Reynolds for painting him in 1778 with his pen close to this eye and so emphasizing his defect. It is noteworthy that in 1756, when forty-seven years old and the onset of presbyopia might in some degree have mitigated eyestrain, he declared that his eyesight had been restored to him. The late G. M. Gould invoked eyestrain to explain the mental peculiarities and neurasthenia of a number of prominent persons, such as Carlyle and his wife, George Henry Lewes and George Eliot, Charles Darwin, Herbert Spencer, Swift, Balzac, Flaubert, and Whittier; that uncorrected hypermetropia with some astigmatism obliged Samuel Pepys to close his diary, permaturely and to the loss of history, at the age of thirty-six, has been convincingly argued by Sir D'Arcy Power. How far eyestrain can reasonably be held to account for some of Johnson's moods is a difficult problem and can hardly be solved. In 1756 and 1773 his right eye was inflamed, as a result, it was thought, of reading much small print. There does not appear to be any evidence that he obviously squinted (though this would not be surprising with one eye blind), except Mrs. Montagu's reference to his "squinting look" made when she was much annoyed at the "compassionate contempt" expressed for her friend the first Lyttelton in "The Lives of the Poets."

PARACUSIS WILLISII

Paracusis willisii is a peculiar form of deafness characterized by hearing better in a noise, and was first described by Thomas Willis (1621–1675) in a woman who could hear her husband only when a drum was beaten; it is thought that the intense vibrations may shake the fixed stapes and so render it capable of transmitting ordinary sounds, or that it is apparent only, the speaker unconsciously raising his voice. There is some reason to think that this may have been one of Johnson's disabilities for he was known to be deaf, and Mrs. Piozzi wrote, "He heard all that was said in a carriage when it was my turn to be deaf." Johnson's indifference to music may have been in part due to his deafness.

Tics

Before his marriage with Mrs. Porter, his future stepdaughter Lucy Porter described Johnson as often having "seemingly convulsive starts and odd gesticulations which tended to one's surprise and ridicule." Hogarth on first meeting with him received a very erroneous impression. When calling on Samuel Richardson he "perceived a person standing at a window in the room, shaking his head and rolling himself about in a strange ridiculous manner, and concluded that he was an idiot, whom his relations had put under the care of Mr. Richardson as a very good man." In 1777 Fanny Burney, who subsequently delighted in his praise of her "Evelina," and whom he called "little Burney," wrote in her diary after their first meeting: "He is, indeed, very ill-favoured, tall and stout but stoops terribly. He is almost bent double. His mouth is almost constantly opening and shutting as if he were chewing. He has a strange method of frequently twirling his fingers and twisting his hands. His body is in constant agitation, see-sawing up and down; his feet are never a moment quiet, and, in short, his whole person is in perpetual motion." Boswell wrote: "Such was the heat and irritability of his blood that not only did he pare his nails to the quick, but scraped the joints of his fingers with a penknife, till they seemed quite red and raw," and from his study of Sydenham's works concluded that the condition was "St. Vitus' dance," or what is often called Sydenham's chorea, a view revived in America by Cahall in 1901. Sir Joshua Reynolds expressed quite clearly in ordinary language what appeared to him to be the explanation, namely that it was "a habit of accompanying his thoughts with certain untoward actions" and that he could control them; Johnson when asked by an *enfant terrible* (Elizabeth Smart), a daughter of his friend Christopher Smart, why he made such strange gestures, replied "From bad habit. Do you, my dear, take care to guard against bad habits." Perhaps his words were more technically accurate than he knew or actually meant; for it would now appear that he was the subject of habit spasm or a motor tic, as well as of the psychical. Of this, as Risien Russell says, no better example can be found than that of Johnson, who, as he walked along the street, used to place his hand on certain posts, and if he missed one, would turn back and perform the accustomed ceremony before proceeding on his way. The motor or convulsive and the psychical tics, which may occur in the same individual, were distinguished from the choreas by Charcot and his colleagues at the Salpêtrière in Paris in the last quarter of the last century, long after Boswell's time. Thomas Lawrence the physician also had convulsive movements of his head and shoulders which, to quote Sir John Hawkins, "gave pain to the beholder, and drew off attention from all that he said." Like Johnson, though there is not any known connection with tics, Lawrence had an attack of paralysis, and was deaf, at first intermittently, which of course sadly interfered with the converse of the two friends, as on the occasion in March, 1782 so graphically described by Mrs. Thrale as terminating in an exchange across the table of punning notes written in Latin. Lawrence wrote his medical papers in choice Latin, and corresponded in that language with Johnson, who considered him one of the best men he had ever known.

GASTROINTESTINAL SYMPTOMS

Johnson was an erratic, not a fastidious, eater, drank "oceans" of tea and certainly suffered from dyspepsia; in 1770 he complained of spasms of old standing in the stomach, which for the last two years had harassed him almost to distraction. In 1772 he confided to Mrs. Thrale the statement, "My nights are flatulent and unquiet," and again in 1775, "I was last night almost convulsed with flatulence." The gall stone found after death in his gall bladder may have played some part in the production of these symptoms in accordance with Lord Moynihan's view and William Mayo's epigrammatic title of a paper "Innocent Gallstones: A Myth." This single gallstone may of course have been composed of pure cholesterol, and this form may be quite latent; but on the other hand the adhesions between the coils of the jejunum may have been caused by cholecystitis. Having suffered much, he was not inclined, though himself a hypochondriac and highly introspective, to suffer gladly the complaints of others unless they appeared to be well founded, and then he could be monstrous kind. His reproof to the Reverend Dr. Delap, "Do not be like the spider, man, and spin conversation incessantly out of thine own bowels," has, like Macaulay's famous if brutal critisicm of Robert Montgomery's poems, perhaps saved the victim from complete oblivion; perhaps after all in Johnson's own words "it is better a man should be abused than forgotten."

GOUT

Gout is stated to have first attacked him in 1773, but in 1770 and 1771 he had complained to Mrs. Thrale of "rheumatism;" in 1776 an acute gouty seizure kept him quiet, and after his hemiplegia it recurred, but this he bore with perhaps rather credulous philosophy, for he wrote to Dr. John Mudge (1721–1793) of Plymouth, "By representing the gout as an antagonist to the palsy, you have said enough to make it welcome."

The suggestion has been made that Johnson had syphilis, either congenital or acquired; but there does not appear to be any real clinical or pathological proof in favour of this. The opacities of the corneae, which so seriously interfered with vision, might, it is true, have been due to the interstitial keratitis of congenital syphilis which may also cause general arrest of development or infantilism, a condition quite unlike that of Johnson; further, as mentioned elsewhere, he undoubtedly had tuberculous adenitis, and tuberculous keratitis seems therefore to be far more probable. That he exposed himself to the risk of acquired lues there is not any evidence, unless Boswell's remark that when associated with the dissipated Richard Savage, the reputed son of Earl Rivers, in wandering about London by night during his late twenties he "was imperceptibly led into some indulgences which occasioned much distress to his virtuous mind" be accepted as such. Like W. E. Gladstone at a later date, he talked and behaved charitably to women of the town with the object of reclaiming them. Lastily the post-mortem examination (vide p. 543) does not record any morbid change pointing to syphilis.

The Question of Endocrine Disorder

The question of some form of endocrine disorder naturally arises in connection with Johnson's bulky form and massive facial appearance, and perhaps more particularly of some degree of over-activity of the anterior lobe of the pituitary, such as has been rather enthusiastically said by Berman to constitute the ideal virile type of "men of brains, practical and theoretical, philosophers, thinkers, creators of new thoughts and new goods," and not enough to produce definite acromegaly, for the portraits showing his hands, if they always are his, do not suggest undue enlargement. While it would be a gross exaggeration to say that he had acromegaly, it is difficult absolutely to rule out moderate hyperpituitarism combined with some hypothyroidism.

Bibliography

Berman, L. Glands Regulating Personality. N. Y., 1921.

Burr, C. W. Some Medical Words in Johnson's Dictionary. Ann. Med. Hist., 9: 183, 1927.

Cahall, W. C. *Am. Med.*, 2: 338, 1901.

Chaplin, A. Medicine in England (1760–1829), Fitz Patrick Lectures, Royal College of Physicians of London (1917–18). London, 1919, pp. 124–126.

Dumont. *Union méd.*, Paris, 1857, 11: 296–297, 521–523.

Testament médical, philosophique et littéraire. Paris, 1865, pp. xxx and 604.

Gould, G. M. Biographical Clinics. 1903, 1: 1904, 2.

Hay, J. J. His Characteristics and Aphorisms. London, Ed. 2, 1884, p. xcvi.

Hollins, C. Dr. Johnson. London, 1928, p. 198.

Hutchison, R. *Edinburgh M. J.*, n.s., 32: 389–406, 1925.

Mayo, W. J. *J. A. M. A.*, 56: 1021, 1911.

Montagu, Mrs. "Queen of the Blues," Her Letters and Friendships from 1762 to 1800. Edited by Reginald Blunt. 2: 157, Lond., 1923.

Osler, W. *Canad. M. A. J.*, 1: 1919, 1911.

Packard, F. R. Medical history of Samuel Johnson. *N. Y. M. J.*, 75: 441–445, 1902.

Parker, G. *Bristol Med.-Chir. J.*, 27: 15, 1909.

Peabody, G. *Tr. Ass. Am. Physicians*, 6: 170, 1891.

Power, D'A. *Lancet*, 1: 1687, 1911.

Rogers, B. M. H. The medical aspects of Boswell's "life of Johnson" with some account of the medical men mentioned in that book. *Bristol Med.-Chir. J.*, 29: 125–148, 1911.

Rolleston, H. *Glasgow M. J.*, 101: 173–191, 1924.

Roscoe, E. S. Aspects of Dr. Johnson. 1928.

Russell, J. S. R. System of Medicine (Allbutt and Rolleston). 8: 628, 1910.

Russell, W. *Brit. M. J.*, 2: 1109, 1909.

Squibb, S. J. *London J. Med.*, 1: 615–623, 1849.

Treves, F. *Cassell's Mag.*, pp. 38–44, Feb., 1924.

Vieillard, P. A. et Dumont. Etude de psychologie médicale de l'idée fixe. A la mémoire de Samuel Johnson. Paris, Baillière, 1854.

Warbasse, J. P. Doctors of Samuel Johnson and his court. *Med. Libr. & Hist. J.*, 5: 65; 194; 260, 1907.

EVOLUTION AND LIFE*

By SIR ANDREW MACPHAIL, KT., O.B.E., M.D., LL.D., M.R.C.S.

MONTREAL

THE pleasant task I set for myself in the next hour is to expound for you the history of the idea of the evolution of life. Ideas are born; they develop; they are transformed; they never die. The history of ideas is the history of the race. They are the real events. Let them be never so new or strange, they have their roots in the far past with a continuity of growth. That is the only justification of history.

Man has always had a curiosity about himself, and about the world in which he finds himself. His earliest observation must have been one of likeness and dissimilarity between objects. Out of that would arise categories; and as he subdivided his categories, he must have observed that insensibly one form merged into another. At that moment the idea of evolution was born. Eventually it developed into a theory which attempted to account for the whole universe and all its contents.

For many primitive ages the subject would excite only a simple curiosity. Denizens of the earth had other things to think about; but there never was a tribe with intelligence so lethargic that it was without a theory of some kind to account for its own existence. Those theories are the material of mythology, superstitution, folk-lore, and tradition. Even down to our own time naturalists were content with their categories, and willing to accept the account of creation as they read it in their sacred books. But the moment arrived when the material accumulated by the fossilists, the botanists, the zoologists, the anatomists, the chemists, the physicists, was so vast that the categories were only a little less numerous than the objects themselves. The philosophers then came upon the scene in search of a principle that would classify and connect all categories into one coherent and intelligible simplicity.

In an obscure way the philosophers had always been at work, but they were inevitably driven back to an evolution of some kind. Empedocles, who attributed all forms of life to the operation of the four elements, earth, air, fire, water, under the influence of two innate forces, attraction and replusion, was not the earliest of the evolutionists; nor was Aristotle, who classified all animals having backbones as blood relations. Francis of Assisi, in a much deeper sense and by a profounder intuition, declared that we are all brothers to the beasts of the field, the birds of the air, and the fishes of the sea. Goethe, more a poet and less a saint, leaped to the specific conclusion that all created forms are cousins sprung from a common stock, and that their diversity is caused by their environment: the eagle by the air, the seal by the sea, the mole in the earth. Linnaeus was neither saint nor poet, but a scientist even in the modern sense. Towards the end of his life he began to suspect that all species arise by a process of gradual variation.

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It was not until our own day that these speculations aroused anything more than the mildest interest. Then there was a sudden blazing up, and, as is usual in the public mind which is ignorant of history, the conflagration centered about the person of one man. This man was Charles Darwin, who in 1859 published his celebrated book which bears a title explanatory of the contents: "On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life." It is a dull book. Few persons now living have read it, and none but the most hardy will venture upon the labour. It contains a vast array of facts, which completely proved what any gardener or breeder already knew. That was seventy years ago. In the intervening years, not one single discovery has been made in support of his thesis.

His own grandfather, Erasmus Darwin, who was born in 1731, showed by numerous examples the sequence of variation and environment. "The world has been evolved," he wrote, "not created: it has arisen from a small beginning, and has increased by the activity of the elemental forces inherent in itself." Lamarck in 1809 had already declared "that species were an illusion produced by the shortness of our individual lives, and that they were constantly changing and melting into one another and into new forms."

Before the year 1780, Buffon had published twenty-five volumes on natural history, all pervaded by rudiments of the evolutionary idea; and in 1830 Cuvier created some interest in the French Academy by suggesting a multiplicity of original species, in opposition to St. Hilaire who contended for one.

This controversy about evolution was the principal event of the nineteenth century. In magnitude it is comparable only with the controversy over Christianity in the second. The causes were somewhat similar. It was a contest between the spirit and the word. The evolutionists were not spiritual above all men; but their opponents were under the strictest bondage of the letter, like the Pharisees of their own book, taking their stand upon the written, as opposed to the living, word. They did not understand the writings which they held sacred. They did not understand that their book is written in terms of art; and art has a language of its own, which must be learned. That book, their opponents reminded them, contains several accounts of the creation of the world; these accounts differ among themselves; if read with strict literalness, they could not all be true; they might all be literally false. It was suggested to them that if they would learn of the creation of the world they must seek where that account is written—in the world itself, and not alone in any book. The traditionalists had assumed too much, and the things that could be shaken passed away.

These writings, I may add, were confused by glosses made upon them. The dogma of the eminent Lightfoot, vice-chancellor of the University of Cambridge, that man was created on October 25, 4004 B.C. at nine o'clock in the morning, became in the minds of many of equal authority with the more general affirmations in the text. We are less credulous now. If a similar statement were made by your own secretary, you would require, at least, that it be confirmed by the Chairman of the Board of

Trustees before you believed it. It is all an affair of evidence, and the evolutionists in time became bold enough to deny the dogma.

Those alone who passed through that period can understand the havoc wrought in the minds of men. The fabric of their dearest beliefs appeared to be dissolving, and the evolutionists offered nothing in exchange. They had nothing of the kind to offer. Their business was quite otherwise. This disorder extended into every individual life. Families, churches, societies were divided. Students in the universities strove to reconcile old beliefs with new facts which could not be evaded even whilst they were being denied. The world was in panic.

The public mind can entertain only one idea at the same time, and that idea is the more disturbing because in its extreme form it is usually grotesque, a false simulacrum of the reality. Evolution then became a kind of witchcraft, its familiar a monstrous monkey. Many of those who went by the name of evolutionists were equally ignorant; the worst of them had a malicious joy in discovering, as they supposed, a scientific warrant for their inherent atheism. My own university never yielded to the evolutionists authority in a field that was not their own. The venerable Principal, Sir William Dawson, never lost his head.

For a weary generation a harsh and partial scientific spirit held sway, erecting a tower of Babel from which the whole world of matter might be surveyed. A like condition prevailed at the end of the 17th century. New modes of thinking at that time also were coming into use. The physical system of Newton appealed to men's minds; the new and powerful coördinate geometry of Descartes was being freely handled; Locke had delivered his stroke against traditionalism in physics and metaphysics. This in turn gave rise to the materialism of the 18th century, as evolution gave rise to the materialism of the nineteenth.

Before the nineteenth century closed, the victory of the evolutionists was apparently complete; and even if Sir William Dawson had been then in his vigour, he would have been compelled to admit that the universe arose by an evolutionary process in which, by a series of continuous progressive changes, a complex arrangement was developed from simpler and more primitive forms, rather than by separate and specific acts of original creation out of nothing.

Upon the facts all were agreed: The animal that required a long neck gained a long neck; the bird gained wings; the fish fins; eyes grew with the need of eyes; an opposing thumb made its appearance, and creatures so endowed were enabled to hold a stick, and thereby gained dominion. Conversely, animals like the mole, that did not use their eyes, lost the organs of vision which had been so hardly won. It was all very simple; and when anything in Nature appears to be simple, we begin to suspect that we do not see the whole of it.

But facts in themselves are meaningless until some kind of sequence is established between them. To reason is quite as imperative as to observe. The evolutionists in time were compelled to ratiocinate, to reason, to rationalize. They developed two theories. The one was satisfied with matter and motion alone, two dangerous assumptions, as Einstein has since proved. The other in despair fell back upon the unknown and unknowable.

In the 17th century, when a similar materialistic conception of the universe prevailed, Bishop Berkeley began to instil doubts, for the instillation of doubt is not the prerogative of the scientist alone. He asked, quite naively, to be supplied with evidence that matter had any existence at all. No evidence was available. He then affirmed, quite boldly, that there was none. From this he proceeded to affirm that no object exists apart from mind; that mind is the deepest reality; that matter has no existence apart from perceptions or volitions of conscious spirit; that physical substantiality is merely an arbitrary thing, connected with causality in the universal mind alone. Nature, then, is merely conscious experience, a sign or symbol of universal intelligence and will. Before you reject this thesis as invalid, ask yourselves if there is color where no man sees, sound where he hears not, texture or substance where he does not feel or touch. It is with the mind we see, hear, feel; and yet, like the woman in "Macbeth," the eyes may be open but the senses shut. Before our own Shakespeare was born, Ronsard had said: "Car le nerf ne sent rien; c'est l'esprit seulement."

Answer from your own experience, too, whether the body is the master or the servant of the mind. It is mind that forces species on their upward evolutionary way. It is mind that forces the student to his studies, the soldier and the martyr to their duty, even whilst the body is in revolt through fear of death. In this also lies the answer to the Hebraic question: What superiority has the man over the beast? This superiority of the man over the beast, and over the rudimentary beast that lies in each one, of the good man over the bad, of good over evil, is measured precisely by the extent to which the mind is made to control the body, compelling it to scorn delights and live laborious days.

In the 19th century, when the fabric of materialism had reared itself anew, another of those insidious philosophers, this time Hegel, was heard to propound the doctrine, *thought and being are identical*, a thesis in radical opposition to the infallibility of natural science and to the methods and results that had sprung from the Newtonian philosophy of which the prevalent evolutionary doctrine of causation was one. In place of this doctrine there arose a new conception upon identical premisses, namely, that of an eternal power which wrought out an eternal purpose by the unalterable method of natural law alone.

Some years ago I thought I was on the point of plucking out the heart of this mystery. One cannot profitably ask the giraffe why he has a long neck, the eagle how he got his wings, or the mole, whence came his blindness. One might expect some information from a student in the fourth year, who was at the same time the best football player in Philadelphia, therefore in America, and therefore in the whole world. The conversation in the gymnasium of the University of Pennsylvania, Tait McKenzie being of the company, was too long to be repeated here; but I led the athlete to the question, why he was the best football player in America. His answer was prompt: "Because I wanted to be." To the final question, why he wanted to be, he was as ignorant as the giraffe. The real answer from giraffe and student is that such was the eternal purpose of an eternal power.

This young man aspired to be a dentist; he was convinced that prowess on the "gridiron," so he called it, was a sure prelude to success in dentistry. He was a small man, and could not compete with size and strength; his refuge was in speed. When he was about to be tackled, he increased his speed, not in a straight line but at a right angle to his course, like an electron. He became a "shadow jumper," a rare species of foot-baller. Those who sought for his intermediate forms were clutching at shadows. It may well be that all rare species, from giraffe to Shakespeare, are merely shadow-jumpers.

I am now more than half done. Rest yourselves a little, whilst I attempt to apply the historical method to yourselves. It must be incomprehensible to your scientific minds that a person rational enough to occupy a professor's chair in a great university should come before you with the intention of speaking for an hour upon a subject so abstruse, and yet without machinery, or pictures, without so much as a piece of chalk, and only a morsel of paper in his hand. The use of the paper, however, is not lest I may forget, but to compel me to restrain my theme within the compass of the hour.

This is an occasion, you would think, which demanded all the paraphernalia of a scientific lecture—electricity, microscopes, glassware, solutions, fossils, pictures, and diagrams. I am not deriding these useful appliances; but let us see what can be done to complete the most difficult part of my task with words alone. I am hopeful of the result, for the idea and the word have been inseparable from the time of Plato at least. To understand ideas conveyed in words alone is, of course, a strain upon the mind. Speech was the last faculty to come; it is the first to go. Gesture, pantomine, pictures are coming into their own again. Scientific experiments also are an easy appeal to the eye, but rarely penetrate into the mind. As an experiment, let us see if we can complete without them.

And yet I am not over sanguine. All experience is against me. There was a time when men came to the University to be educated, to have something definite done to their minds. I said "men" by inadvertence. Although I have had women in my classes for thirty years, I still think of students as men; and I am not yet quite sure why women come, what happens to their minds whilst they are here, and still less what happens to them after they have gone out into the world again. At any rate, in those days men emerged from the University with some education, because they had so few things to learn. What they did learn they integrated into themselves. They bore away a pattern, instead of unrelated points of light. They developed a certain philosophy of life.

I am not saying it is our fault. The modern University is overwhelmed and bewildered by forces which have fallen upon it; but it is doing the right and inevitable thing, assembling those forces into categories, setting bounds to each, striving to understand the nature and sequence of them. We are censured on the ground that we are more concerned with practitioners than with philosophers, with something less than professions and little more than trades. The real University does not exist for either purpose. It does not exist for students even; still less for the professors; it exists for itself.

Students in the meantime are free to come and take what they can, for the University is changing its dispositions and at the same moment is heavily engaged. The time for education will come again, as it comes after every upheaval to which the term Renasence is applied. We shall soon have settled down. Those of you, for example, who take, and give, lectures in physics may, I hope, expect that the professors will then have made up their minds if there really is an aether at all; and if so, whether it is of an absolute rigidity, an inconceivable tenuity, or is only a series of tubes. The throes of this new birth are nearly at an end. Have patience.

I do not fail to remind myself that I am speaking from the Foundation of the William Potter Memorial Lecture. His instructions, as conveyed to me by Dr. Chevalier Jackson, the Secretary of the Board of Trustees of Jefferson Medical College, accord with my own mood: not to bewail the dead in sorrow, not to make of this a solemn occasion; but rather to find in it a meaning and sense of hope for ourselves who still live.

That meaning and sense of hope I find alone in the mystical and mysterious, yet comprehensible, Idea of Evolution: that all life is one and eternal; and that this eternal life must be fought for and seized upon by all who would live eternally. Let us now see if I can develop this Idea in modern terms, and in accordance with the design of William Potter, founder of this Lectureship.

But, there is nothing unusual in what I say. It is merely a variation upon an old theme which I have made my own; the concluding lecture of an annual series addressed to my own students, and to various scientific societies, in the attempt to convince them that the modern scientific "giantship is going somewhat crestfallen, stalking with less unconscionable strides." Indeed, the substance and even the main form has already appeared in various college papers, notably in the *Dalbousie Review*, of which I apprehend many of you have not heard.

The history that makes itself before our eyes is the most difficult to read, yet all history is one and continuous as the growth of the universe is. The idea of evolution at this moment is expanding as never before in the new and intellectually rich soil that is now being formed by the fusion of matter and mind. These two were created one. It was men who divorced them. It is we who have brought them together again. The history of that most modern achievement is quite clear.

All things flow, said Heraclitus with that penetrating genius of the Greek mind. When I was a child, and first saw a man sharpen the blade of a razor on a piece of leather, I wondered. Now I know that steel itself flows in a state of flux. When I came to the University, the ultimate division of matter was the molecule. The atom was a new invention; then came the ion. Even this was inadequate: the electronic atom, a universe in itself, swam into our ken. But I hear the chemists complain that they are not yet satisfied; they are still striving after smaller things.

To come finally to the historical status of the evolutionary idea at the present moment: biologists now agree to assume that the whole universe is composed of the same matter, having an essential unity in spite of a diversity of elements, and in similar conditions acting in the same way; that there is an evolution of the forms assumed by matter; that the universe was once in electronic or some lesser form. Much later, colloidal organic matter appeared; out of that arose the living organism as we know it, and those simple forms continued to develop into forms of greater complexity. From the beginning there was unity, uniformity, and development by a process which was not a fresh creation out of nothingness, but emergent from previously existing forms. From this it will appear that living matter arose upon the earth from non-living matter at a time when electrons had joined to form atoms, and atoms molecules, when by radiation the mass had become cool enough to yield water in which colloid carbons are soluble. By this theory mind is traced back to the earliest physiological reaction, and was implicit in it.

Forty years ago the student of evolution was referred to Thomas Henry Huxley. The student of the modern idea can do no better than follow his descendant, Julian Huxley. This most modern biologist is firm in the belief, that all matter, whether living or not, is associated with something of the same general description as mind in the higher animals; that there is one fundamental substance which has not only material but "mental" properties. To this the term "world-stuff" is applied. The term "matter" will not do, since physicists and chemists have moulded the word to their own uses, and they have not learned to measure the mental element it contains.

Mr. Bertrand Russell, who also has an admirable gift of exposition, is more specific in his description of this "world-stuff." He affirms, "though not with complete certainty, that all matter consists of hydrogen nuclei and electrons, which are therefore the only 'elements' in the strict sense of the word. Whether these two will ultimately prove to be modifications of some one more fundamental substance," he finds it "quite impossible to say. It may be," he concludes, "that the aether is, after all, what is really fundamental, and that electrons and hydrogen nuclei are merely states of strain." Finally he declares, "that no physicist really means to assert that an electron is a little hard lump of matter."

Mr. Russell likens the atom of helium to a revolving wheel of four spokes and a short axis, every spoke having at the end a hydrogen nucleus, and the axis at each end an electron. That would be a contrivance like a "jack-stone." I could present to you a handful of these familiar objects as a concession to the scientific demand for the concrete, and also to suggest that nothing is so false as an illustration; for an atom cannot have any essential resemblance to a jack-stone. I could have produced a more elaborate contrivance, but it would not make the matter any clearer. I could present to you also an object sent to me by a famous physicist in another University. He uses it to illustrate an electron and a planet. He furnished me with a formula showing, if I read aright, how many cubic millimeters of pressure to the square milligram it will endure. It seems very hard, and measures exactly 1 centimeter in diameter. A colleague, in the Mechanical Department, thinks it was once a ball-bearing in some machine. I have now by the word alone created a jack-stone and a planet, or rather caused them to emerge into your minds without the intervention of your eyes. The man with the mongoose may have been right after all.

You see now, I hope, the position to which I have led you. All life is one. It is continuous and uniform, with unity and continuity, as the philosophers say. And yet, we must be careful even in this assumption of continuity, although it is the essence of the Newtonian doctrine, reinforced up to a certain point at least by the modern idea of relativity; for the still more recent observation of the world of electrons is disturbing. In that world the electrons appear to move and display energy, not continuously, but by a series of unpredicted jumps; and this process by which an electron passes from one orbit to another is, apparently, quite contrary to every law in the Newtonian conception of physical occurrences. Indeed the new dynamics of the atom seems to confirm Einstein's surmise that neither time nor space itself is continuous. Certainly he has destroyed the established conception of mass as the quantity of matter, for mass according to his doctrine is absorbed into energy and is inconstant to that extent. I am not a scientist, but merely an historian using scientific ideas for the development of my theme; and I feel a certain temerity in even mentioning phenomena which were first described by my colleague Professor Rutherford.

Applied to life, if life be one, the terms "lower" and "higher" are then no longer terms of mutual exclusion, of contradistinction. They are merely terms of degree and quality. Life is the final expression of the universal Will. That is the inner meaning of evolution. To live according to this Will is the unconscious desire of the giraffe which achieves a long neck in order that he may not perish. That "this Will be done" in himself is the final end to which every rational human being aspires daily in order that he may not perish too. This is the "kingdom" whose coming is desired, a kingdom in which that Will shall have been completely achieved. Giraffes and men who tried to live without conformity to, or in transgression of, that Will have come to a bad end. Their reward is death. Evolution in so far as they are concerned is at an end.

On the other hand, the belief that man, as such, has an "immortal soul" seems to be Greek rather than Christian in its origin. St. Luke's version (xx, 35) of a famous saying tells of those "which shall be accounted worthy to obtain that world and the resurrection from the dead." St. Paul almost repeats the words when he writes, (Philippians III, 11): "If by any means I might attain unto the resurrection of the dead." And if he is the writer of I Timothy, he is also the author of the remarkable words, (VI, 12). "Lay hold on eternal life whereunto you are called." That, I take it, was the lesson William Potter desired to enforce by these lectures.

By this universal formula of the emergence of the universal Will, every problem in biology is solved,—the problem of good and evil, of pain and sorrow, of right and wrong, of sin and penalty, of necessity and freedom, of riches and poverty, of life and death. These problems, after all, are fundamental in biology, for I do not conceive that the science of biology ends with the life of the oyster. Indeed it is probable that if we really understood the oyster, we should understand much else besides; still more probable that, unless we understand this "much else," we cannot understand the oyster at all. We might be oyster-men; we shall not be biologists. One of those special biologists, known as a poet, discovered long since what the real problem of the biologist is:

> Flower in the crannied wall,
> I pluck you out of the crannies,
> I hold you here, root and all, in my hand.
> Little flower—but if I could understand
> What you are, root and all, and all in all,
> I should know what God and man is.

You will observe that the poet has introduced into our discussion an important word that up to the present I have deliberately avoided, the word God, and I must stop long enough to remark that biologists are beginning to suspect that without this word their terminology is impoverished. It is of ancient lineage. The Greek biologists knew it as Logos, and to those same Stoics a very famous half-Hebrew half-Roman biologist expounded the essence of that power in terms which for clarity and completeness are yet unexcelled. In it, he said, we live and move and have our being. Those of you who are unfamiliar with the reference will find it in the library. I may remark further that in these days a scientific man may be as religious as he likes, and no aspersion cast upon his science; a religious man may be as scientific as he likes, and no aspersion cast upon his religion.

You will observe, finally, that I have introduced still another new word, Religion. It need create no alarm. The idea is quite scientific. Every living being, from the parasite that lives upon the bacillus to the student that lives upon the university, looks out upon the universe through eyes that enlarge and increase in the process of evolution. These media of consciousness are sensibility, sensation, desire, emotion, passion, will, conscience. When these eyes look out in different directions, there is discord and consequent death. When all these eyes look forward, and accept guidance in conformity with the general Will that governs, there is peace and life. This life then moves in the spirit of religion. The change is so remarkable, it is commonly described as a new creation. The human mind is after all the largest field for the progress of evolution.

At times it does happen that there are persons of extreme perception to whom this Will is especially revealed. The One through whom this Will was most especially revealed found final authority in this: I am come that men might have life, and that they might have it more abundantly.

PHILIP SYNG PHYSICK

FATHER OF AMERICAN SURGERY*

By WILLIAM S. MIDDLETON, M.D.

MADISON, WISCONSIN

A FATHER'S appreciation of a surgical dressing of an injured finger by his son determined the latter's career. To the end of his life this son regretted his choice of a profession and expressed a preference for silversmithy. On the advice of the preceptor the father escorted the novitiate to Pennsylvania Hospital to witness an unusual amputation of the leg. So nauseated did the boy become that he was forced to leave the amphitheater. The shock of seeing a skeleton boiled to prepare the bones for anatomic purposes perturbed the lad to such a degree that he begged his father's permission to change his profession. Failing of his end he applied himself so assiduously as to win the approbation of John Hunter and other distinguished teachers. In spite of his intimate contact with such masters and their researches our subject carried to his grave a morbid sense of self-accusation relative to certain animal experimentation pursued early in his medical training. Apprehensive and nervously overwrought before serious operations, he was cool and self-possessed in the face of any surgical emergency. When late in life he faced the responsibility of operating upon the most distinguished jurist of the land, he sought to divert the task to his associates and in their judgment suffered more intensely than the patient. Modest and self-effacing, he avoided public notice of whatever order. He none the less trusted the precepts of his own experience before the accepted authorities of the medical world. Fearing interment alive he made unusual provisions to insure a certainty of death before burial; and although an active morbid anatomist himself, he explicitly forbade a necropsy upon his own body. He, furthermore, directed that a guard be appointed to protect his grave from the resurrectionists. From this psychologic maze emerges the figure of the father of American surgery, Philip Syng Physick.

The offspring of early Philadelphian autocracy, Physick received his preliminary education in the academy maintained by the Society of Friends in South Fourth Street. At this period Robert Proud, the historian, was master of the school; and during Physick's attendance there, he lived in the family of John Todd, father-in-law of the vivacious Dolly Madison. At this stage of development there is little to indicate the ultimate trend of the young Physick's mind. He was industrious and punctual. The example which he afforded the other students in these directions apparently alienated rather than invited their intimacy. In any event he drew more and more within himself and sought diversion in mechanical pursuits where he showed unusual aptitude. From the Friends' Academy Physick entered the College of the University of

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Pennsylvania, and after three years of close application, marked only by a growing fondness for and facility in the classics, he was granted the bachelor of arts degree in May, 1785.

A family tradition is the sole foundation for the statement that Philip's careful dressing of his father's lacerated finger led the latter to decide upon medicine as a career for his son. Adam Kuhn was secured as preceptor for the boy, who forthwith began the study of medicine. The episodes of the surgical amphitheater at Pennsylvania Hospital and of the anatomical laboratory are apparently authentic. Kuhn's pedagogical ideas were reflected in Physick's memorization of Cullen's First Lines. If the method was rather abstruse, at least it afforded a speaking acquaintance with the masters whom Kuhn revered; for from Cullen the young student passed to van Swieten, Hoffman, Stahl and Haller. The ancient fathers of medicine, Hippocrates, Galen, Celsus, Dioscorides and the rest, were authorities known and respected by Kuhn and in turn by his pupils. And so three years passed.

From this rarified atmosphere of abstract medical learning the elder Physick took Philip to London where advantages of medical education superior to those available in Philadelphia were afforded. To his great good fortune he was accepted as the private pupil of John Hunter in January, 1789. The father desired of Hunter a list of the medical texts that his son would require, to which the master replied on pointing to the anatomic subjects in the dissecting room, "These are the books, which your son will learn under my direction; the others are fit for very little." Thus was the pedant replaced by the true scholar. Physick fully appreciated and availed himself of his unusual opportunity and in turn Hunter reciprocated by extending every courtesy to him. Indeed he acknowledged the young American as his favorite student. In addition to his dissections under Hunter, Physick attended lectures on midwifery by John Clark and William Osborne.

Manuscript notes of facts and cases recorded in this period attest his diligence: "February, 1789—Visited Mr. Hunter. In the evening, after being entertained with tea, coffee, and general conversation, Doctor Baillie exhibited a preparation." Truly a charming admixture of pabulum for alimentary and mental assimilation.

November 15, 1789—Mr. Cruickshank related the particulars of a case of hydrothorax, in which upon opening into the right side of the chest, he evacuated nine pints of water, and in the left side there was found one pint. The lung of the right side was compressed to a small size, and instead of feeling spongy as common, it was solid and fleshy, and quite incapable of being dilated by air, so that the respiration was carried on by the left lung altogether. The patient, during his life, was incapable of sitting or standing up, feeling great pain when he attempted it; but was quite easy in bed when lying on his right side, but could not lie on his left side. His pulse, for near two months before his death, was quite regular, though before that time it had been otherwise, and the apothecary who had attended him had suspicions of hydrothorax. There was a swelling in the abdomen, which was very painful to him. This proved to be a cancerous tumour of the whole of the omentum, which being very heavy, when he attempted to get up gave him the pain mentioned before.

In this stimulating and invigorating environment Physick remained for a year, after which period he obtained a desirable house surgeoncy to St. George's Hospital, John Hunter's influence doubtless swinging the balance in favor of an American against the usual appointment of an Englishman. Further evidence of his high estimate of Physick's ability is found in a short sentence from "General Principles of the Blood:" "Many of these experiments were repeated by my desire, by Dr. Physic, now of Philadelphia, when he acted as house-surgeon at St. George's Hospital, whose accuracy I could depend upon." Naturally the young foreigner was closely observed by his English associates and by the students attendant upon the clinics. Physick related to one of his biographers, Randolph, an experience with a recent dislocation of the shoulder joint, the expeditious reduction of which gained him favor in the eyes of his eager critics. A serious illness during his stay at St. George's caused Hunter to seriously consider the advisability of his protege's early return to America. In January, 1791 Physick completed his residency at St. George's and bore with him testimonials of unusual warmth as to his application, ability and promise. He likewise received a diploma from the Royal College of Surgeons. Most flattering, however, was John Hunter's invitation to make his residence his home and to join him as a personal assistant. Hunter urged the advantages of practice in London, but Physick accepted this offer only for that period necessary to establish contacts in Edinburgh. Until May, 1791, then, he lived with Hunter and assisted him in his practice, in the preparation of anatomic specimens and in physiologic experimentation. His renunciation of Hunter's attractive offer has been attributed to many causes, but apparently the prosaic explanation was a catarrhal condition which was greatly exacerbated by the climate of London.

Determined to return to his native land for the practice of medicine, Physick sought his degree in Edinburgh. The University there stood in high favor in America and had as a matter of fact served as the model after which the infant university at Philadelphia had planned its medical school. Hence a degree from the mother school would greatly exhance a graduate's outlook in any of the centers of learning in America, but more particularly in Philadelphia. At Edinburgh Physick attended routine lectures at the University, visited the Royal Infirmary and availed himself generally of every opportunity for intellectual advancement. As in London he eschewed purely social engagements wherever possible. In the preparation of his thesis, which was required to be presented in Latin, Physick's knowledge of the language was adequate enough to render unnecessary the help of the parasitic "grinders," that genus of "hacks" in the classical languages who infested the universities of the period for the purpose of assisting students less adept in Latin over the last scholastic hurdle. Physick's thesis, "De Apoplexia," has no unusual merit. His appreciation of his professional godfathers is witnessed by his dedication. After his graduation in May, 1792, he remained in Edinburgh and assisted in the preparation of some anatomic materials. In June, 1792, he prepared an intussusception of the small bowels into the colon for the house surgeon at the Royal Infirmary.

Returning to his native city in September, 1792, Physick opened an office in Mulberry Street near Third. The rebuffs of the early days of his practice were especially trying by reason of his extremely sensitive nature. Gross writes that "for several years he trod the alleys and by-ways of his native city before his income was sufficient to pay for his shoestrings and the powder on his queue." To Charles Caldwell, he confessed, "Such were my discouragement, and dissatisfaction that I would have sold the fee simple of my profession for a thousand pounds, returned into the country, become a farmer, and never again have felt a pulse in the capacity of a physician." So hard put was Physick that he sought to institute a plan of family practice at the rate of twenty dollars a year.

The frightful yellow fever epidemic of 1793 gave him active occupation. In August of that awful year Bush Hill was opened as an isolation hospital and Physick volunteered as a resident physician. So outstanding were his intrepidity and unselfish devotion to duty that he won the unqualified respect of Benjamin Rush and Stephen Girard, the most conspicuous of the heroic workers in that period. Governor Mifflin made Physick an alderman, empowering him with police authority to quell the riotous group of attendants who first came to care for the unfortunate fever victims at Bush Hill. Probably the most noteworthy of Physick's efforts during the epidemic of '93 were his postmortem studies of the yellow fever. With Cathrall he performed a series of necropsies which demonstrated to their satisfaction that gastritis was the primary and essential lesion of the disease. The relapse of a patient who took "chicken water" was offered as further proof of this conclusion. Indeed, some contemporaries were so bold as to give Physick the rather questionable honor of having antedated Broussais in maintaining an intimate relationship between the condition of the stomach and bilious or yellow fever. More important by virtue of the perspective of the intervening years and advancing knowledge, was his demonstration of the non-contagious nature of yellow fever. Whether or not he should be credited with having converted Rush to this viewpoint is difficult to say; but by example and personal experience at least he afforded ample evidence of the validity of his position. Some criticism has been directed toward his resignation from the Bush Hill staff after the appointment of Deveze, the French physician newly arrived from the West Indies. A glance at the peculiar terms of Deveze's appointment will satisfy the most critical of Physick's justification. A protege of Stephen Girard, Deveze was given the unusual staff position of medical attendant to those cases who requested his services. Such discrimination immediately disrupted the medical organization and Leib, Cathrall, Annan and Physick resigned their positions as resident physicians. It should furthermore be added that the profession in Philadelphia was sharply divided not only on the score of the origin of the fever, but also as to its treatment. Physick and his associates at Bush Hill were strict adherents to the precepts and practice of Benjamin Rush which strongly opposed the

West Indian practice of stimulation, tonics, bark, opiates and cold baths. Hence Physick had little in common with Deveze. However, after his resignation, Physick did not relax his efforts in combatting the fever, from which he suffered his first attack in this epidemic. Stephen Girard's continued interest in and friendship for Physick are sufficient evidences of the respect in which he held the young physician. Certainly a man of Girard's habit and contact would scarcely have tolerated professional narrowness in his associates, much less have cultivated the friendship of one who was said to have deserted his post because the newly appointed associate, Deveze, was French.

Be that as it may, lifelong friendships were broken and new alliances made during this trying period in Philadelphia. Caldwell relates that during the epidemic Rush had some disagreement with Caspar Wistar, to whom he had previously referred all of his surgery. For whatever cause, after this time Physick acted as Rush's surgical consultant and in turn the former sent his purely medical cases to Rush. His appointment as surgeon to the Pennsylvania Hospital initiated the era of his greatest activity and usefulness. Surgery was an undifferentiated branch of practice in Philadelphia at this time and Physick brought to a fallow field the prestige and facility born of the best medical contacts in Britain. Conservative and well balanced, his advice came to be sought from far and near. Tactful and considerate, Caldwell remarked that he "could even talk away disease." Contrary to the contemporary opinion Physick's professional fees were always moderate and his thoughtfulness of the circumstances of his patients noteworthy. Nevertheless he accumulated great wealth through wise investments of his extensive income. A certain fineness which lacked firmness characterizes many of the analyses of Physick. Nothing could be further from his actual clinical habit. Under no circumstance would he brook interference with his plan of treatment. Horner relates that Physick once dismissed himself from the care of a hydrocephalic child with this statement to the mother, "Madam, I take leave of your child, the responsibility of its life rests with you." When the parents again sought his counsel and acquiesced in his demands, the child recovered. Another patient's objections to repeated venesections were answered thus, "Sir, I must have my own way, or none at all; I bid you good day."

Up to 1800 surgery was still included under the department of anatomy at the University of Pennsylvania. No separate teaching in this subject was attempted. In this year the students at Pennsylvania by letter petitioned Physick to lecture to them on surgery. Nathaniel Chapman actively fostered this action. Benjamin Rush attended his introductory lecture which represented Physick's maiden effort in public address and had been committed to memory. The lecture was given in the Pennsylvania Hospital and was pronounced a success by Rush. Five years later a separate chair of surgery was established in the University and Physick became its logical occupant. Meigs has best characterized his efforts as a teacher, "I never saw a man who knew so thoroughly well all that he knew." Physick carried the soundness of his surgical practice into the classroom and emphasized the questions under discussion by frequent citations from his personal experiences. As a rule his lectures were carefully prepared beforehand and read in a measured tone. To Physick medical facts were matters to be handled with great care and accuracy and he deplored extemporaneous surgical lectures. On occasions when he forsook his notes momentarily and recited his personal experiences, he waxed most intense and at times even became eloquent. By nature grave and dignified, he avoided every affectation of speech and gesture; yet his sincerity and earnestness carried the force of conviction to the throngs of students attracted to his lecture room by his rapidly extending reputation.

Several notebooks of medical students of that day are preserved to posterity in the Library of the College of Physicians of Philadelphia; and while there is little difference in the notes of Physick's lectures from year to year, the soundness of his teaching is constantly borne upon the reader. The precepts of John Hunter appear in his treatment of the subject of inflammation. In answer to the contention of certain physicians that air caused inflammation, Physick sought the following experimental proof:

> I once tried an experiment on a kitten. I made an incision thro' the pleura—thro' this orifice I passed a tube and filled one side of the chest with air. I then withdrew the tube and closed up the wound. In that situation it remained three days without any remarkable change; it was then suffocated and an examination was made, when no perceptible difference could be observed in the two sides . . . I mention this to shew that air is not so noxious, as is often supposed, to prevent surgeons from being too anxious about closing up a wound with a view of keeping the air from the internal surface.

This particular experiment upon a living animal was apparently the basis for Physick's lifelong attitude of self-accusation in the matter of vivisection.

With his growing popularity as a surgeon and a teacher, added opportunities for services came to Physick. Among these was the appointment to the staff of the Philadelphia Alms House in 1801.

> Alms House, 16th Sept. 1801
> Esteemed Friend—I take the liberty to inform you that, by a Resolution of the Board of Managers of the 7th inst., you were appointed Surgeon Extraordinary, and on the 14th following one of the Physicians of this Institution; and with sentiments of sincere regard.
> I remain your friend,
> Peter Browne.
> Dr. Philip Syng Physick.

This particular form of appointment is without parallel in the history of this ancient institution. He served in his unusual capacities until 1805.

It has been charged that the austere exterior of Physick denied the students a ready access to his advice and counsel. He was not in the common parlance a good mixer, but many incidents might be cited to establish his genuine kindness of heart. William Edmonds Horner in a necrological notice of his chief records:

> The relations subsisting between myself and the individual, whose traits and virtues I have so imperfectly commemorated, was one of ardent affection on my part—of profound veneration—of benefits received, and few, perhaps none, returned;—of a kindness which took me by the hand, at a time when I was youthful and unpatronized; and by its

activity and uniform tenour, infused encouragement, strengthened the imbecility of early professional life, and finally led to whatever may be most valuable in my condition.

Affairs were moving rapidly in the Medical School and politics were not to be denied. On the death of Caspar Wistar the brilliant John Syng Dorsey, nephew of Physick, succeeded to the chair of anatomy in May, 1818. Universally esteemed for his personal charm and professional promise Dorsey's appointment was a popular one. Scarcely had he pronounced his inaugural when he was stricken on November 10, 1818. The shock to Physick was stunning in that to Dorsey he had extended every educational and professional advantage. In turn Dorsey's development and prospect fully repaid Physick who viewed with justifiable pride the rapid advance of his house-pupil and kinsman. In the South, Maryland had greatly strengthened her medical faculty to the end that inroads were beginning to be felt on the enrollment at Pennsylvania. According to certain historians this circumstance determined the decision to transfer Physick to the chair of anatomy (1819) and to call William Gibson from Maryland to the professorship of surgery thus vacated by Physick. Whatever the machinations were which effected this maneuver, in the light of subsequent events they clearly bear the mark of intrigue. Chapman has been credited with pulling the wires; but, if so, he successfully concealed his tracks, except for an ill-guarded statement to Granville Sharp Pattison that this arrangement "would operate beneficially in two ways. It would strengthen the University of Pennsylvania, and at the same time weaken that of Maryland." It is a matter of record, however, that although Physick acquiesced in his transfer to the chair of anatomy, his family and friends actively opposed the move. Randolph, his son-in-law, remarks, "We had positive assurances from himself that the change was contrary to his own wishes and inclination: how far the interests of the institution to which he belonged may have been promoted by it, I do not mean to inquire." Gross wrote, "The change was beyond question a serious injury to Physick, if not also to the University of Pennsylvania. In the chair of surgery he was *facile princeps*, while in that of anatomy he simply did what might have been done quite as well, if not better, by a dozen of his Philadelphia contemporaries." One can but conclude that Physick was influenced against his better judgment to make this transfer to serve what were represented to him as the best interests of the Medical School. Whatever the motives of its proponents, history records that from the day of his transfer Physick's luster as a teacher faded.

Gross gives rather grudging credit to Philip Syng Physick's ability as a surgeon and to his contributions in this field. In his Autobiography he remarks:

> That he was a man of marked ability no one who knew him, or who is acquainted with his history, will deny; but that he possessed talents which towered above those of all his professional contemporaries is not true. Caldwell, Chapman, Drake and Hosack, not to mention others, were men of vastly greater mental calibre. If he stood for a long period at the head of surgery in this country, as unquestionably he did, it was because he had the field of surgery to himself. He was really its first settler, and it is

therefore not surprising that it was for a full quarter of a century almost his exclusive domain.

With this charge of preeminence by default it is interesting to investigate Physick's actual contributions to the science of surgery. Unfortunately he lacked the taste for printer's ink so well exemplified in his distinguished critic. Indeed, Physick's repugnance to publication was so deep seated as to deny to posterity a large share of his vast experience. Of the soundness of his practice and the original bent of his mind fortunately the notes of his students and a meager group of contributions to the current medical literature bear witness. Most interesting among the manuscripts bearing on the subject of this study in the Library of the College of Physicians are Dorsey's notes made as a house-pupil of Physick from 1798 to 1800. Futhermore the former's "Practice of Surgery" is replete with references to the surgical procedures of his chief.

Several examples of his practice are taken from the lecture notes of Aaron Burr Tucker (1809–10 and 1810–11):

> I once knew a patient who complained of a periodical pain in the head, which afterwards was found to be owing to an abscess in the calf of the leg: upon opening the tumor the pain ceased. I have twice seen all the symptoms of a nervous fever, produced by a small abscess near the abdominal ring.

This observation would rank Physick as an early supporter of the theory of focal infection.

His sound practice in maintaining drainage of a locus of suppuration is vouchsafed by the following: "I have succeeded by making large punctures into the Abscess and introducing a bougie to keep it open—the bougie must be moved to discharge the pus within every hour or two." Likewise he advocated the use of a seton in abscess of the breast.

On one occasion he related the unusual experience of absence of hemorrhage in the case of a crushing amputation of the arm of a boy in a mill. Again he recited the uneventful recovery of a patient with a penetrating stab wound of the chest, whose only treatment had been the closure of the puncture with adhesive. Physick followed his old master, John Hunter, in the ligation of varicose veins for the treatment of ulcer. While supporting Hunter's theory of "increased action beyond what the parts are able to bear" in explanation for mortification, Physick added, "I am inclined to think that in every species of mortification, there is something peculiar, leading to the death of the part—something more than violent inflammatory action." Blisters were utilized with some success in the treatment of this condition. Nothing was beneath his notice. Shortly after his appointment to the Pennsylvania Hospital he directed his attention to the care of the neglected leg ulcers. By the institution of the logical practice of bed rest with elevation of the leg and soothing applications in the inflamed types an appreciable group healed. Other methods were applied to the more sluggish types. Physiologic rest as a therapeutic measure was recognized in his practice of splinting fingers which were the seat of abrasions or ulcerations.

Physick's mechanical ingenuity found expression in many useful instruments given to his chosen field. One of the first of these was a forceps for securing deep bleeding vessels.

This device enabled the surgeon to pass a needle with a ligature beneath deeply placed vessels and was utilized by Dorsey and Randolph in other vessels than the internal pudic artery, for which it was first designed. In 1804 Physick reported the ligation and removal of a varicose (arteriovenous) aneurysm which had resulted from venesection. Proctology was not in that period recognized as a restricted field of surgery. Physick first described diverticula of the rectum. A curved bistoury was devised by him for the treatment of fistula-in-ano. In January, 1809 he performed successfully an original operation for artificial anus. In this instance his failure to record his valuable technique almost lost him priority in the discovery of the method. Baron Dupuytren claimed originality in this operation, but finally granted Physick this honor and the latter expressed pleasure on learning that Roux, successor to Dupuytren as surgeon-in-chief at Hôtel Dieu, gave him full credit for its development. For the removal of hemorrhoids Physick utilized the wire snare (double canula) kept in place for twenty-four hours. The contained slough separated in two or three days under the application of "soft poultice of bread and milk."

One of the most valuable of Physick's contributions to surgery was the animal ligature. His vast experience and close observation in the use and ultimate fate of non-absorbable materials as ligatures led to his trial of various substances for this purpose. Although Physick was antedated in his use of animal structures as ligatures, his plan of attack deserves preservation. In the "Eclectic Repertory," 1816, may be found the following remarks:

> Several years ago, recollecting how completely leather straps, spread with adhesive plaster, and applied over wounds for the purpose of keeping their sides in contact, were dissolved by the fluids discharged from the wound, it appeared to me that ligatures might be made of leather, or of some other animal substance, with which the sides of a blood-vessel could be compressed for a sufficient time to prevent hemorrhage; that such ligatures would be dissolved in a few days, and would be evacuated from the cavity of the wound.

With this thought in mind Physick set Dorsey and Hartshorne at work. Buckskin was used as ligating material with some success. Thereafter parchment, French kid and catgut were tried in turn. To test their respective qualities, strips of each material were placed over a suppurating ulcer. Buckskin and French kid were the first dissolved. Thereafter the parchment gave way and lastly the catgut. Indeed the last named appeared little changed. Impregnation of the leather with varnish was suggested by Physick to lengthen its period of usefulness and tendon occurred to him as having possibilities in this direction. His brief report is concluded with this remark: "This hasty notice on the subject is given, because it is thought important that these facts should be made public without delay."

Dorsey as the house-pupil of Philip Syng Physick recorded many widely diversified operations covering practically all fields of the surgery of that period. For example on December 25, 1798 a child, hydrocephalic from birth, was trephined with an instrument devised by Physick and 8 ounces of fluid evacuated. After two further trephines the child died on March 1st. "Dr. P. open'd ye head and 3 quarts of water were discharged—the Brain was spread around ye concave surface of ye cranium resembling a thick membrane—this tho' apparently External Hydrocephalus was by the dissection proven to be internal." The teaching of John Hunter to follow his clinical cases to the necropsy table was thus carried into the practice of his pupil. Radium and the roentgen ray have been added to the measures for the control of new growths within the past generation; but the practice of Physick in such cases included only surgical removal and caustic (arsenical) pastes. Dorsey noted as to one of these patients: "Very like to go—gets no better— has discarded us for Indians and Witchcraft—pow-wow doctors." Interestingly Physick used adhesive plaster in place of sutures to approximate wound edges after v-resections. Head injuries were treated conservatively. Blood-letting constituted an important adjunct in such cases. Dorsey quoted Hunter's dictum to Physick, "Wait until he reacts, and then I shall bleed him,—of course I will."

Meigs relates a striking incident relative to Physick's conviction of the salubrious effect of venesection on inflammations of the eye. Meigs had followed his teacher's precept to what appeared the utmost limit and finally in desperation called the latter in consultation.

> Dr. P. accompanied me to her darkened chamber. "Give me a little light from yonder window," said he, after examining the pulse. "Open the shutter a little wider." Then touching the lids he looked into the eyes, and, after the briefest glance at it, said, "That will do. Good morning, madam," and we left the room.
>
> "Now Dr. Physick," said I, "I have fully and boldly carried out your plan in the treatment of this ophthalmia, for I have copiously bled my patient daily until I am ashamed and afraid to do so again, because at the last operation she fainted so badly as to greatly alarm me. I fear I am not far from the disgrace of losing an eye in my practice—a disaster I cannot contemplate with patience. What can I possibly do now?" "Who is your bleeder?" "Mr Conrad Ripperger." "Very well; pray, Doctor, send for Mr. Ripperger to take twelve ounces from the arm this morning, and ask him to meet you again at ten tomorrow to bleed her again, provided she should not appear very much better at your next visit."
>
> I well remember how shocked I was by this decision and that I told him that it was very hard for me to be convinced, but that I willingly acknowledged his superior wisdom and authority.
>
> Mrs. S. having been duly bled, Mr. Ripperger was on hand at the appointed hour of the following day; and truer words were never spoken than those, that on looking into the eye, I could discover only faint traces of the very violent and obstinate inflammation, for virtually she was cured already. Mr. R. did not repeat his operation, and Mrs. Smith's eye was shortly and perfectly restored to health.

Philip Syng Physick's reputation as an ophthalmic surgeon was nationwide. In a malpractice case famed in the annals of the Philadelphia bar, George McClellan was defendant on the grounds of lack of ordinary skill in the care of cataract. The eccentric Judge Barnes presided and invited the qualified expert to sit beside him when called to witness. Whereupon he queried, "Dr. Physick, you must have a large experience in diseases of the eye?" To which the doctor answered in the affirmative. "Will you be kind enough to state what your experience is in operations for cataract?" "I have performed many operations of this kind, and have occasionally lost an eye; but I have not been quite so unlucky as Baron Wenzel, a German oculist, who declared that he lost a hatful of eyes before he became an expert." To which the judge returned, "Sit down, great man, sit down: that will do, great man."

The extraction of the opaque crystalline lens constituted the first operation recorded by Physick and it was his last major operation. Dorsey has preserved the account of one of these operations.

> May 6, 1799, an assistant drawing up ye superior palpebra and Dr. P. drawing down ye lower one with his left hand. He plunged the knife into the cornea at its upper and outer part about the 16th of an inch from ye Sclerotica. He now passed it quickly parallel to the iris toward the internal canthus bringing it out opposite to where he began. He now enlarged the incision with a pair of small scissors—the assistant now removed his hand and Dr. P. by a gentle pressure forced out ye opaque crystaline which was about ⅝ of an inch in diameter—the patient could not yet see distinctly Dr. P. introduced a small pair of forceps & extracted two small pieces of ye opaque capsule of the chrystaline, still however the patient could not see distinctly—till after having left the eye at rest for some minutes the Dr. thought he could see something like a thin membrane floating behind ye pupil this he happily extracted & prov'd to be the capsule—ye patient instantly saw quite distinctly—saw Dr. P's watch etc.—he complain'd of no pain during the operation—& is now May 8th quite easy no inflammation has yet taken place.

From the student Tucker's notes an interesting case is abstracted:

> A Dutchman who had been blind for five years was operated on for cataract. His wife stood by during the operation and was the first person he saw. The poor man burst into a flood of tears and it was with great difficulty he was prevented (literally) from crying his eyes out.

Tucker further records a more unusual operation in his notes of Physick's lectures:

> I once saw a case where the person had washed his face with his urine whilst labouring under gonorrhea. Inflammation supervened and all the cornea became opaque. The patient called on me for his sight and from his anxious request, I consented to operate on his eye, though with little hopes of success. I passed a knife thro' the cornea and cut off a piece of the iris. The eye was then closed and the patient put to bed. He can now see to read if the print be large. I never saw such an operation before.

Partial iridectomies are common operations for such indications in this day; but the ingenuity and daring of the pioneer surgeon excite the admiration and respect of the historian.

The surgery of the nose and throat benefitted by his excursions into these fields. Relative to fractures of the nose Physick remarked:

> Sometimes the fragments are pushed into the nose, which occasions a difficulty in breathing. When in this state, they may be reduced, by introducing a narrow spatula, or something of the kind, into the nostril; or a female catheter and when reduced, it may be retained in its place, by means of a gum elastic catheter, if it be necessary.

His suggestions in the matter of tonsillectomy were of two orders and with certain slight modifications are followed to this day. In the first place he suggested the use of the "snare" in the form of a double canula which he thus described:

> The double canula I employ is about four inches long, with short arms soldered on the sides, near one end of the instrument, at right angles to it. Through the canula I next pass a doubled iron wire, and fasten one of its extremities round one of the arms of the instrument, leaving the other free and projecting five or six inches. This enables me to increase or decrease the size of the noose, formed by the doubling of the wire, at pleasure.

A pair of pliers was used to draw up the free end of the wire which was then secured about the second side arm. The double canula was left in place for twenty four hours and was extremely efficacious. The second suggestion was in the form of a guillotine which differed in no great detail from the instrument in common use until comparatively recent years, and in fact, in certain quarters, still in considerable favor. This guillotine was likewise used for the amputation of the uvula. To fix the tonsil for various manipulations prior to enucleation he devised a long forceps.

Orthopedic surgery appealed to Physick by reason of its call for mechanical ingenuity. His splints for fractures were modified to meet the individual need and he frequently called upon the famous wood carver, William Rush, to put his ideas into practical form. For example Desault's apparatus for the management of fracture of the femur was altered by lengthening so as to effect a counter-extension in the long axis of the leg. It furthermore established more complete rest. In the matter of the classical Pott's fracture there again arose the question of priority of description of the method of treatment with Dupuytren, but the honor is usually granted the latter. Many suggestions were made by Physick for the improvement of splints and of methods of treating fractures. In fractures of the spine where of the respiratory factors only diaphragmatic activity is preserved, Physick cautioned concerning the danger of turning such a patient on to the face. In the various dislocations to render manipulations easier and resistance less he advised bleeding "ad deliquium animi."

In the treatment of morbus coxarius Physick gained a deserved reputation by reason of his recognition of the indications and applications of sound principles of practice. Enlisting William Rush's help he fashioned splints to fit not only all parts of the diseased hip but also the thigh, leg and major portion of the trunk on the involved side. These splints extended from mid-thorax almost to the external malleolus and were wide enough to reach almost half way round the trunk. Instead of attempting early extension Physick awaited the subsidence of inflammation before straightening the flexed extremity. The entire period of treatment ranged from six months to two years with an average of twelve months, during which time there were applied from two to four splints. Particularly did he exercise caution in the removal of the splints and in the institution of physical activity. Interestingly Randolph advocated the use of this method in caries of the spine.

Physick's most original contribution to orthopedic surgery was the use of the seton in ununited fracture:

> In 1802 Isaac Patterson, seaman, aged twenty-eight, presented himself to Physick with the history of having sustained a fracture of the left arm on April 11, 1801. Thereafter it had been splinted for three weeks; and when the dressing was taken down, the physician declared it to be ununited and in mal-

position. Extension and efforts at replacement were ineffectual; so that four months later he dismissed his medical attendants and shipped as steward. Six months later further mechanical procedures proved unavailing and after two months' treatment he was referred to Physick with the left humerus presenting a pseudo-arthrosis. Soon after admission to Pennsylvania Hospital Patterson developed the bilious fever and his convalescence therefrom was very slow. On December 18, 1802 (twenty months after the original accident) Physick passed a needle carrying a skein of silk through the arm and between the fragments of the humerus. The operation was attended by little pain. A few days later inflammation ensued and suppuration followed as had been anticipated. Thereupon the arm was extended and appropriate splints applied. The suppuration necessitated dressings until May 4, 1803, when bony union was deemed complete. The seton was accordingly removed and the sinus healed in a few days. On May 28, 1803 the patient was discharged with the arm apparently as strong as ever.

The sequel to this operative history is quite interesting in that in 1830 Randolph asked Physick to see a patient suffering from remittent fever in consultation. Physick immediately recognized the patient as the subject of the first seton operation. In the intervening twenty eight years the arm had given the patient no trouble and had seemed in every detail as strong as its fellow. The patient succumbed to the fever and Randolph obtained permission to remove the humerus. Compact bone united the two fragments and in the center of this zone was a hole through which the seton had passed. This expedient was utilized by Physick in fractures of the long bones of either extremity and in fractures of the jaw.

Strong as was Physick's position in these widely divergent branches of surgery, in no field was he so well known and his services so much in demand as in genitourinary diseases. His contributions to this field were many and interesting. In the treatment of hydrocele he commonly evacuated the fluid through a trocar and then filled the empty sac with wine run in from a bladder. This in turn was withdrawn in a minute. Temporary relief of urinary obstruction from hypertrophy of the prostrate attended the passing of a catheter covered with the intestine of a sheep which was then distended slightly with tepid water and gently withdrawn. Physick's objectivity explains his invention of the bougie-tipped catheter. In 1796 a male patient at the Pennsylvania Hospital suffered from retention for forty-eight hours. Failing in his attempts to pass a catheter, Physick succeeded in passing a bougie which, of course, failed to relieve the situation; but on this lead he devised the bougie–tipped catheter which proved successful in this and other similar cases. He was responsible for the construction of the waxed linen bougies which he preferred to metallic and gum elastic bougies. In 1795 he devised a lancet concealed in a canula for the division of stricture of the urethra.

In 1797 Physick performed his first lithotomy. Before his death he came to occupy a preeminent position among practitioners of this skillful procedure in this country. Dorsey in his notebook under date of December 3, 1799 records the following account of this operation:

> Doctor Physick this morning performed ye operation of Lythotomy—the patient was a Boy about 2 years old. The symptoms when under a fit of it were bloody

urine which passed drop by drop, excruciating pain, sudden stoppage of urine, etc. —These symptoms determined Dr. P. to sound ye Child which he did and distinctly felt ye stone in ye bladder—he now introduced his finger into ye Anus and felt it still more distinctly—in consequence of wh he this morning operated.

The patient being placed on his Back on a table, his hands and feet were tied together—his perineum being elevated and exposed to a clear light—Dr. P. introduced ye Director or Staff into his bladder this was held by an assistant & an Incision was made by Dr. P. beginning just below ye Scrotum about ⅛ of an inch on ye left side of ye Rapha & continued about 2 inches down to ye left side of ye anus—Ye Urethra was now open'd by repeated strokes of ye Scalpel—The director being now laid bare and cleared of all membrane ye Gorget was introduced & pushed into ye Bladder before it was withdrawn ye forceps were introduced but owing to a great contraction of ye Bladder the stone was seized with difficulty—& when ye forceps embraced it it broke into 3 pieces—which were separately extracted and ye patient put to bed.

4th at ¼ before 8 o'clock this morning ye patient died. The Stupidity of ye Parents prevented Dr. P's seeing him after Death.

Evening—8 o'clock—Dr. P. has just opened ye cavity of ye abdomen & examined ye Bladder and parts continguous—Sees no cause wh could have caused ye Child's death excepting a little inflammation near where ye opening into it was made. The operation was performed just as usual—Ye Rectum was not in the least injured nor any other part than is normal in performing ye operation. The Coats of ye Bladder were much indurated & thickened owing to ye Irritation of ye Stone—The Dr. is firmly persuaded that had he seen him at 12 o'clock last night & taken ℥ VIII of blood from him & put him in ye warm bath ye Inflamation would have been turned & ye patient been cured.

Again the precept of John Hunter dominated the practice of Physick in its failures as well as its successes and no opportunity was lost to learn from either eventuality. Physick constructed a modification of the gorget used in dividing the prostate gland and the neck of the bladder so that by making the beak and the blade separable he was better able to control the portion of the instrument utilized in commencing the incision.

The most famous operation of Physick's long career was on Chief Justice Marshall for stone. Although Physick was approaching the end of his professional activities at the time of the Justice's attack (October, 1831), yet his skill and facility in this particular operation made him the logical choice as surgeon. The age and the station of the subject increased Physick's natural concern. Randolph records that Physick was especially reluctant to proceed and offered to turn the operation over to him at the last moment. Randolph with a fine sense of the fitness of things declined, feeling that Physick should round out his distinguished surgical career in this manner on so eminent a subject. Physick in turn rose to the occasion. Randolph states, "I do not think I ever saw him display greater neatness than on that occasion." Over a thousand stones were removed from the bladder and Marshall made a complete recovery.

A misrepresentation of Marshall's medical condition subsequent to this trying operation evoked the following communication to the *Southern Literary Messenger:*

Philadelphia, March 25, 1836

Sir:—A mistake, evidently unintentional, having appeared in the February number of your Journal for this year, we feel convinced you will, upon proper representation, take pleasure in correcting it; as an impression so erroneous might have a prejudicial tendency. Under the notice of the Eulogies on the Life and Character of the late Chief Justice Marshall, it is there stated that "for several years past Judge Marshall had suffered under a most excruciating malady. A surgical operation, by Dr. Physick, of Philadelphia, at length procured him relief; but a hurt received in travelling last spring seems to have caused a return of the former complaint with circumstances of aggravated pain and danger. Having revisited Philadelphia in the hope of again finding a cure, his disease there overpowered him; and he died on the 6th of July 1835, in the 80th year of his age."

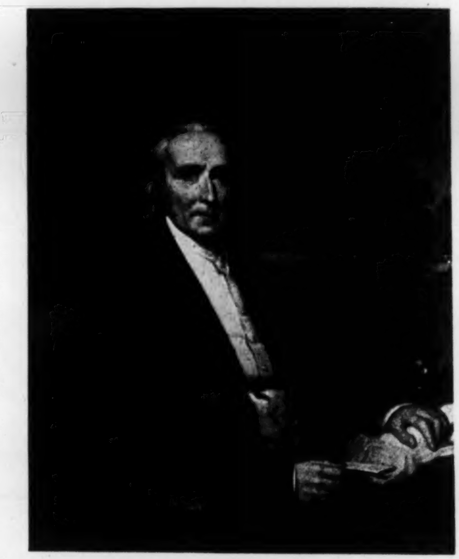


Fig. 1. Philip Syng Physick.

Now, sir, the above quotation is incorrect in the following respects—Judge Marshall never had a return of the complaint for which he was operated upon by Dr. Physick. After the demise of Chief Justice Marshall, it became our melancholy duty to make a post mortem examination, which we did in the most careful manner, and ascertained that his bladder did not contain one particle of calculous matter. Its mucous coat was in a perfectly natural state, and exhibited not the slightest traces of irritation.

The cause of his death was a very diseased condition of the liver, which was enormously enlarged, and contained several tuberculous abscesses of great size. Its pressure upon the stomach had the effect of dislodging this organ from its natural situation, and compressing it in such a manner, that for some time previous to its death it would not retain the smallest quantity of nutriment. By publishing this statement, you will oblige

Yours, very respectfully,
N. Chapman, M.D.
J. Randolph, M.D.

To J. W. White, Esq.

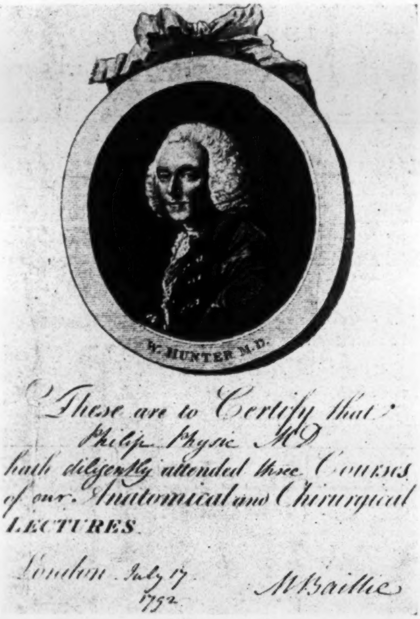
This lithotomy on Chief Justice Marshall was the last important operation performed by Philip Syng Physick.

As a physician Physick bore the stamp of his day and showed little of the initiative and originality which marked him as the outstanding American surgeon of that period. His propensities in phlebotomy have been emphasized and they doubtless reflect his devotion to and confidence in Benjamin Rush. Indeed he carried this therapeutic procedure to the extreme of suggesting its use in concealed hemorrhage in order to reduce the blood volume. An experience with a case of hydrophobia suggested to Physick the possible wisdom of tracheotomy in preventing suffocation, since in this case the respiratory difficulty was found not to arise from a local inflammatory process in the pharynx, larynx nor trachea. Apparently the opportunity to put his suggestion to practice did not present itself. The yellow fever epidemic of 1798–99 again found Physick at the forefront of the defending forces. As a result of his postmortem studies he propounded the theory that the black vomitus of the fever arose not from the liver but from the stomach and the intestines. On several occasions the pylorus had been found tightly contracted and the stomach full of black vomit. Furthermore, the color, taste and physical characteristics of this material in his judgment proved that it was not bile. Physick enlisted the chemist Seybert's cooperation to determine the mode of action and the fate of mercury in the body. Gold guineas were placed in the mouth of salivated patients and no change occurred in the coins. Furthermore, copper and silver were placed in the blood drawn from patients treated with mercury and controls made in the blood of untreated individuals. In neither group was a change in the metals remarked. On these data they concluded that the animal body reduced the mercury beyond its power to act as a metal and that ptyalism resulted from direct stimulation. In 1807 Physick's interest was aroused in Priestley's experiments with "fixed air." At his request an apothecary prepared carbonated water for use in his practice. So far as can be learned Physick was the first to use carbonated water medicinally.

Physick entertained very set ideas in the matter of diet.

The following episode from Gross is illustrative.

> A woman fifty years of age, under my informant's care, was desirous of consulting the "Father of American Surgery" on account of cancer of the breast. An operation was agreed upon, but was deferred for six weeks in order, by a process of rigid dieting, as was then the custom, to put the system in a proper condition. The only food allowed by Physick during this period was a piece of dry bread with a little salt and a glass of cold water three times a day. This, as her appetite was excellent, reduced the poor woman to the verge of starvation. She grew thin, pale, and exceedingly feeble, and, as she expressed it, often felt as if she could bite a piece out of one of my informant's children, such was her craving for nourishment. One day she asked Physick if she might not eat an ear of green corn, then in season. "What fattens hogs?" asked Physick. "Corn," answered the patient. "Then don't eat corn; I don't want to fatten you." The operation was performed in due time, but no change was made in the diet. A few days after this, however, my



W. HUNTER M.D.

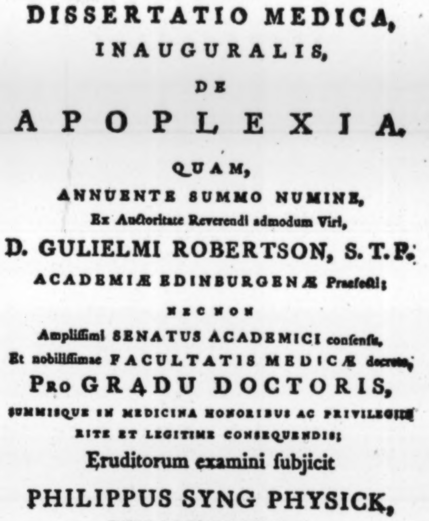
These are to Certify that
Philip Physic M D
hath diligently attended three Courses
of our Anatomical and Chirurgical
LECTURES.

London July 17
1792

M Baillie

FIG. 2.

informant asked whether a little animal food would not be permissable. "Yes, go and see the cook; tell her to give you the leg and thigh of a chicken; strip off every bit of skin, and then, holding them upright at the foot end, pour over them a pint of boiling water, and give the woman occasionally a tablespoonful of the broth seasoned with a little salt." The poor creature recovered from the effects of the operation, but died some months after from a general carcinomatous cachexia.



DISSERTATIO MEDICA,
INAUGURALIS,
DE
APOPLEXIA.
QUAM,
ANNUENTE SUMMO NUMINE,
Ex Auctoritate Reverendi admodum Viri,
D. GULIELMI ROBERTSON, S.T.P.
ACADEMIÆ EDINBURGENÆ Praefecti;
NECNON
Ampliſſimi SENATUS ACADEMICI conſenſu,
Et nobiliſſimae FACULTATIS MEDICÆ decreto,
PRO GRADU DOCTORIS,
SUMMISQUE IN MEDICINA HONORIBUS AC PRIVILEGIIS
RITE ET LEGITIME CONSEQUENDIS;
Eruditorum examini ſubjicit
PHILIPPUS SYNG PHYSICK,
PHILADELPHIENSIS,
Soc. Chir. Lond.
Necnon
Lyc, Med. Lond. Sod.

"Ea, quae diſputavi, diſſerere malui, quam judicare."
Cic. de Nat. D. III. 40.

Ad diem 25. Junii, hora locoque ſolitis.

EDINBURGI:
Apud BALFOUR et SMELLIE,
Academiae Typographos.
M,DCC,XCII.

FIG. 3. TITLE PAGE OF PHYSICK'S THESIS.

In his inaugural thesis of 1767 Alexander Monro secundus of Edinburgh proposed the use of a catheter to wash noxious materials from the stomach. Philip Syng Physick was ignorant of this suggestion when he first put the method to clinical trial in 1812. His experience is related in the *Eclectic Repertory* for that year. A mother had given to each of two children a single drop of laudanum, from a bottle in which there had occurred great concentration by evaporation.

> We attempted to give him ipecacuanha, but could not make him swallow it. The countenances of the children became livid,—their breathing very laborious; with long intervals between the times of each inspiration, and the pulse in each very feeble.
>
> Under these conditions it clearly appeared no time was to be lost, and therefore, as they could not swallow anything, I determined to inject an emetic into their stomachs. For this purpose a large flexible catheter was passed through the mouth down the oesophagus into the stomach, and through this, one drachm of ipecacuanha mixed with water was quickly injected by means of a common pewter syringe.

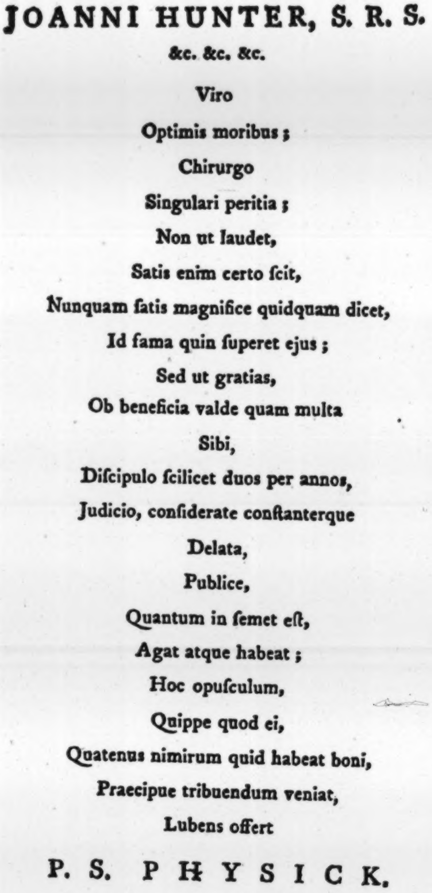
For years Physick had advocated this procedure in his lecture room and in 1809 Dorsey had done a gastric lavage by this method on his uncle's advice. It was, however, characteristic of the inherent fairness of the man that Physick should have acknowledged the established priority of Monro secundus in the same journal that contained his original communication within four months of its publication. In spite of this explanatory note Physick unquestionably first used the stomach tube for the removal of poisons from this viscus and should be so credited.

Vivid and intimate word pictures of Physick, the man, have been left to posterity by contemporary commentators. Of medium stature, his figure was slight but well proportioned. His features were regular and classical. In repose his pallor gave an almost marble-like cast to his countenance; but his expression, while contained and subdued, was highly intelligent and benignant. The forehead was high and the large nose rather aquiline. The eyes were hazel in color and possessed with all their gentleness a keenly penetrating quality. His rather large ears were concealed beneath his hair which was powdered until the last decade of his life. The lips were thin and the mouth wide.

> His manners were to the last degree dignified and elegant, and as he still wore his hair powdered and clubbed, he bore about him a sort of traditional look, which added to the respect which everywhere, in public and private, greeted him, always reverently . . . He was a man like a statue of marble but animated by a promethean light and warmth.

His tenderness and gentleness of manner belied his firmness of conviction; and his hesitancy was never mistaken for indecision by those who knew him. Of melancholic bent, he was never given to mirth and his rare slow smile was cherished by his associates. It is reported that Physick once responded to the invitation of William P. Dewees to attend the theater, thus, "No, it will not do for men occupying our position to be seen at such a place. We must not make ourselves so common."

In dress Physick avoided every affectation; yet his neatly groomed figure was conspicuous. The coat was invariably a dark blue with metal buttons, while the waistcoat was made of lighter material. The pantaloons were light gray or drab in color. A neat bow-knot cravat completed the clothing which was so constant as to be almost uniform. A queue was worn to the end, although in later years it was not so large.



JOANNI HUNTER, S. R. S.
&c. &c. &c.
Viro
Optimis moribus ;
Chirurgo
Singulari peritia ;
Non ut laudet,
Satis enim certo ſcit,
Nunquam ſatis magnifice quidquam dicet,
Id fama quin ſuperet ejus ;
Sed ut gratias,
Ob beneficia valde quam multa
Sibi,
Diſcipulo ſcilicet duos per annos,
Judicio, conſiderate conſtanterque
Delata,
Publice,
Quantum in ſemet eſt,
Agat atque habeat ;
Hoc opuſculum,
Quippe quod ei,
Quatenus nimirum quid habeat boni,
Praecipue tribuendum veniat,
Lubens offert
P. S. PHYSICK.

FIG. 4. DEDICATION OF PHYSICK'S THESIS.

Philip Syng Physick was born in Philadelphia on July 7, 1768 of English parents. His father was obviously held in high esteem by the proprietors of the colony, since he was Keeper of the Great Seal of the Colony of Pennsylvania before the Revolution.

Thereafter he was maintained in residence either in Philadelphia or on one of the outlying estates as the confidential agent of the Penn family. To his mother Philip owed his piety, gentleness and fondness for intellectual pursuits. However, his interest in his maternal grandfather Syng's vocation, silversmithy, created a diverting influence which almost wrecked his father's plans for a medical training. It may well be questioned whether with his inhibitions Philip Syng Physick would have given America a Benvenuto Cellini, had he followed his bent. In 1800 Physick married Elizabeth Emlen, the gifted daughter of a minister of the Society of Friends. To this union two sons and two daughters were born, all of whom survived the father. In private life the cold exterior was lifted and the tender, sympathetic parent revealed. His integrity and honesty in all matters were above reproach. With advancing years he became more interested in religion, reading extensively upon theologic subjects. Rather than obtaining solace from such sources, their conflicting views rendered him somewhat depressed and his chief comfort was found in reading the New Testament, a practice which he pursued daily for many years. The friendship of Dr. Delancey, his pastor, was earnestly sought and reciprocated in his closing years.

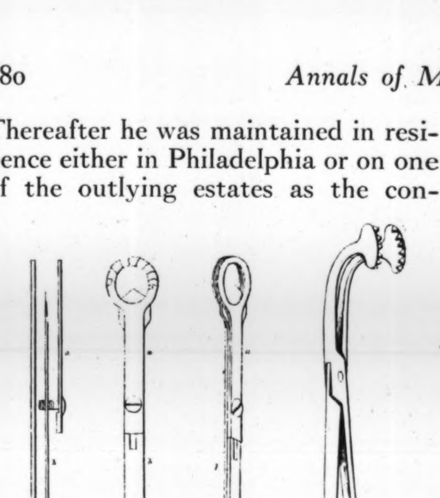


FIG. 5. INSTRUMENTS DEVISED BY PHYSICK FOR TONSILLAR OPERATIONS. (*From Am. J. M. Sc.*)

Although his physical endowment was apparent meager, Philip Syng Physick survived several very serious illnesses. An early severe attack of smallpox left its external stamp upon him. Mention has been made of his serious illness while residing in London. He suffered twice from the yellow fever (1793 and 1797). Of the second and more serious of these attacks he was fond of relating the following incident: A friendly blacksmith would appear each day and inquire of the black attendant, "Is your master dead yet?" The reply in the negative was as reassuring as the question had been disconcerting to the patient in the chamber above. His surprise was the greater therefore to learn of the death of the interrogator himself from the fever, when after his own recovery he made inquiry for the smith. Dewees during this attack removed 176 ounces of blood from Physick. His convalescence was slow and he repaired to his brother's farm on the Susquehanna in Cecil County, Maryland. In spite of the tax on his strength Physick never regretted his activity in the various epidemics of yellow fever in his native city. A serious illness diagnosed as typhus fever in 1813 left Physick in a weakened condition, from which he never completely recovered. Its gastrointestinal sequelae strongly suggest typhoid rather than typhus fever. In any event thereafter his dietary was extremely limited both as to quantity and variety of food. Evidences of circulatory insufficiency made their appearance and to add to his burden of ill-health some renal condition intervened with periodic attacks of kidney colic from calculus. The decline subsequent to the death of Dorsey in 1819 became progressively more evident. Horner reports a meeting with Physick on November 26, 1837:

> He [Physick] saluted me with a dejected and melancholy grace, "Ah, doctor, how do you do, you see I am almost gone." His tottering emaciated frame, and altered visage, but too certainly confirmed the statement. I replied, "I hope not, sir: I hope you will yet live to see many days of usefulness." "Me," he said, "me useful, with my frame? No impossible; I must die soon." I said to this, "I trust that your debility is not so great, but that your knowledge at least may be applied usefully to others." He gave a sardonic and incredulous smile: "Well," says he, "I am glad to see you." [Then Horner was called back to Physick's carriage.] "Doctor," says he, "you are a friend of mine, I always esteemed you as such. I now take my last leave of you . . . I shall not see you again, I must die soon, my fate is fixed, I can't help it, I am sorry for it."

And on the morning of December 15, 1837 the first great American surgeon passed away, apparently the victim of a myocardial failure with general anasarca.

Charles Caldwell in a commenorative discourse before the Louisville Medical Institute was constrained to eulogize him in this manner:

> Physick, whose professional sagacity and skill have, for nearly half a century, presented, in cases almost innumerable, the last glimmerings of hope to afflicted humanity; and who has been hailed as the medical savior of thousands, where even hope itself was extinguished, and the grave perhaps longed for, as a refuge from suffering—Physick, who has thus been distinguished among the most distinguished of professional luminaries and benefactors in practice, has closed forever his earthly labors, and passed to his reward.

Notices of his death appeared in periodicals throughout the land and memorial resolutions were drawn by medical and scientific organizations everywhere. Conspicuous among these were the resolutions from the medical classes at Pennsylvania, where. he had since 1831 acted only in an emeritus capacity, and from a rival institution, Jefferson Medical College. Unfortunately the suggestion of the student body of the Washington Medical College of Baltimore to the effect that a memorial to the lamented Physick be erected in Philiadelphia through the cooperation of the various medical schools of the country, bore no fruit. According to the expressed will of the deceased his body was kept in a warm room, well swathed, to insure early putrefaction and thus to prevent interment alive. On December 21, 1837 the remains of Philip Syng Physick were borne to the Christ Church Burial Grounds at Fifth and Arch Streets, attended by a notable gathering of University trustees, faculty and students, members of the American Philosophical Society, trustees, faculty and students of Jefferson Medical College and many others in official and unofficial capacities. Here he was placed at rest within a few feet of his patron and friend, Benjamin Rush.

Physick's dying request that a

guard be placed over his grave to protect his body from the resurrectionists might well have been prompted by his Edinburgh experiences and the shades of Burke and Hare, but it is not necessary to seek so far afield as this for an extenuating circumstance. Ashhurst on the occasion of the Centennial Celebration of the College of Physicians related the following episode:

The evening after Dr. Rush had been buried—this incident, also I heard from the lips of Dr. Norris—Dr. Physick was sitting in an upper room of his house, in a solemn frame of mind, as we can well believe, thinking of the events of the day, and of the death of the great physician with whom he had not always been in harmony. Summoned to go down stairs by a loud ring at the door-bell, he was confronted in the hallway by an unusually large negro, who abruptly asked him, "Do you want Dr. Rush?" "What do you mean?" said Dr. Physick, involuntarily recoiling, "Dr. Rush is dead." "I will have him at the College for you at nine o'clock to-morrow morning, for twenty dollars," replied his burly visitor. It is needless to say that this kind offer was not accepted.

During his life Philip Syng Physick was the recipient of many high professional and personal honors; but it is doubtful whether any so affected him as the service of silver plate voted him by the Board of Managers of Bush Hill in recognition of his services during the epidemic of 1798. On January 6, 1825 he was elected a member of the Royal Academy of Medicine of France, and in November, 1836 he was made an honorary fellow of the Royal Medical and Chirurgical Society of London. His offices were sought in many societies, as witness his presidency over the Phrenological Society of Philadelphia, the Pennsylvania State Temperance Society and the Philadelphia Medical Society. However, he was not especially active in the affairs of any of them not even excepting the American Philosophical Society to which he was elected in 1802. The intense partizanship of the times precluded Physick's membership in the College of Physicians, to which by every measure of training and accomplishment he might have aspired, since on January 8, 1798, rallying around their leader, Benjamin Rush, the young Turks of that day had formed a new society, The Academy of Medicine of Philadelphia, and elected Physick to its presidency. This rival organization of the College had a very short life and Physick was active in no other medical society.

With Physick life was a serious matter and to the essentials of living he gave freely of himself and substance. He therefore had little reserve for the unessentials. Direct in expression himself he was intolerant of prolixity in others. To this one circumstance may be attributed his disinclination to publish his medical experiences and discoveries. His sparse publications are shorn of all verbose adornment and display an apparent abhorrence of the method. Notwithstanding this peculiar repression the influence wielded by Philip Syng Physick on American medicine was remarkable and his contributions to a backward science in a new country conspicuous. In view of these circumstances he justly earned his title, the father of American surgery.[1]

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[1] Grateful acknowledgement is made for the photostatic reproductions herein presented through the courtesy of Charles Perry Fisher, Librarian of the College of Physicians of Philadelphia.

PERSONAL GLIMPSES OF S. WEIR MITCHELL

INCIDENTS IN THE LIFE OF THE PHYSICIAN, SCIENTIST, NOVELIST AND POET NARRATED BY HIS ASSOCIATE AND ASSISTANT

By J. MADISON TAYLOR, M.A., M.D.

PHILADELPHIA

WEIR Mitchell stands eminent in history among those who moulded character and purpose in nations at opportune times. His was a towering personality; the embodiment of, and on a parity with, such subtle energies as those of steam, of radium, of the Roentgen, the Haversian, and now the cosmic rays of Millikan. When such human influences become appreciated they will be utilized for worldwide advantage.

He was not, fortunately, one of those who in our crude democracy so exaggerates and extols, "a self-made man." He was born to an inheritance of education, of refinement, of an atmosphere of culture, so encouraging to native superiorities. To these he added a dominating ambition and clear aims. Thus he started at a point in personal evolution to which few wholly self-made men ever attain. "As a boy he had that best of training: hearing his elders converse on things worth talking about."

The mass and symmetry of his radiant traits and forces impressed all who met him. These emanations of power, even more than his intellectuality, went far toward producing those beneficent effects on others, and making him so effective in his chosen field of endeavor. So graphic and dominating were these personal influences that destructive critics seized upon them in order to detract from his scientific acumen. His extraordinary professional successes led them to belittle him as an exponent of the best in medical resources during his era.

He was a chivalric gentleman. His quest was ever not only to restore health but to raise the coefficient of mental efficiency in those who had sunk below their own norm through inadequacies, inherited and acquired, or through giving way or confusion in their self-adapting and self-repairing powers. Whatsoever the causes of these bewilderments might have been, howsoever diverse and obscure, when he set his mind and energies to the task, few patients failed to profit and cordially to cooperate in achieving greater powers than they had ever thought possible. His contributions were made not only to the average group, but to a majority of the exceptional few who exerted influence in the affairs of men.

Many of his contemporaries may have known, doubtless did know, more of the science of human ailments, in some particulars, than did he. None of his compeers, however, knew so well how to apply what was of practical use in complicated situations. This proficiency was due to his rare power of intuitive perception. His was a refined instinct for seizing upon and dealing adequately with an individual's most real and urgent needs.

The grasp of his intuitions, the potency of his personality, included not alone those factors which equipped him as a great healer of body, mind and bewildered feeling reactions, but also gave him a far-seeing penetration for determining where the elements of medical knowledge most needed further exposition. These confused states he separated, disentangled and submitted to minute research. No man, certainly of his epoch, demonstrated more of the seer, the true discoverer and expositor of principles which lead to practical truths. Not only did he, during his long career as physician, poet, fiction writer and notable ornament to social life, do creditably in these diversified fields, but he personally initiated and carried on a multitude of scientific investigations, each one of which added much to the sum total of useful knowledge.

Some parts of his career was the result of accident, of being thrown rudely off his line of determination and confident expectation. For Dr. Mitchell's primary and cherished ambition was to teach physiology. He aimed to get, and had every reason to feel sure he would get, the Chair of Physiology at his Alma Mater (the Jefferson Medical School). For this post he diligently strove to fit himself in all that was then known of the mysteries of growth and of the phenomena and laws of human functioning as these departed from the normal, in both the physical and the mental domain.

He was reasonably confident of election. His chief rival was Dr. J. Aitken Meigs, whose qualifications were not regarded by those who knew as the equal of his. Yet, to the amazement of those in the college circle, Professor Meigs was chosen. This buffet of fate staggered him. The special training of a young lifetime, several years, was thus rendered useless as a basis of his career. None the less it was this exceptional preparedness which made him master of the problems of life. When he recovered he said, as I have often heard him tell: "I then resolved I would devote myself to human welfare as a practitioner of medicine, in particular to maladies of the nerves, the mind and behavior or feeling reactions, to their remakings and reconstructions."

Soon after this the War of the Rebellion (1861 to 1865) occurred. He was appointed in charge of the United States Hospital for Injuries of the Nerves, on Turner's Lane, Philadelphia. His associates were Dr. W. W. Keen and Dr. Moorehouse. Of the magnificient material there provided he determined to make full use. The cases were studied with extreme care by him and by Dr. Keen (who is still among us at the age of ninety-one). The outcome was the first book on the subject "Injuries to Nerves and Their Consequences," which became a classic.

In forming an evaluation of the personality of any great leader, one who impresses his consciousness upon mankind throughout the civilized world, it is illuminating to note how he profited by the opportunities supplied, the character of his education and training. By this is meant not so much the scholastic or technical elements, as those which President Morgan of Antioch College calls "mastery of the arts of life."

These include, indeed are based upon, such all-round duties as a New England farmer's boy or girl was, in simpler days, called upon to perform in securing reasonable comforts for the domestic group. Barn and field and garden were centers for the cultivation of variegated proficiencies of hand, of arm, of all the muscles, nerves and sense organs, perceptors and integrators to such an extent that one became thereafter facile in readapting them to any situation. This barn and stable phase is the true school of intelligence. It is becoming accredited with as much educative value as was "the little red schoolhouse." Beyond the barn lay a wonder world of rotations, living things, plant and animal, domestic and wild. There, spread out, was the cycle of the seasons, and the pupil studied the out of doors the year round.

While Dr. Mitchell after adulthood remained largely in the city where his distinguished father, John Kearsley Mitchell, was professor of medicine, he had a country place near town. He was exceptionally fond of good horses, a taste which his son keenly shared. The brilliant John K. Mitchell, Jr., who died of an accident in his prime, was an exceptionally accomplished horseman. This passion for superior horses, their breeding, training and bartering, seems allied to those qualities called chivalrous. And these S. Weir Mitchell possessed in a conspicuous degree.

Not only did he early develop a taste for reading broadly of the best world literature, but even then buddings of ambition grew to distinction in creative literature. The associates of his father were, many of them, men of letters. One of them was the brilliant English actress, Fanny Kemble, who married Senator Pierce Butler. Once while waiting in his office for his attention to my reports, he caught me (I felt guilty) devouring a novel found there. He asked me: "What is that you are reading?" Then he said gravely and earnestly:

> Be sure to read and reread much good fiction by notable authors. There you will learn more sound psychology than anywhere else except from personal work among ailing human beings. Form the habit early of seeking for mental causes and carefully interpret their effects. Only those physicians can do the best healing who are sound psychologists.

His aptitude for fiction writing occupied incidentally some part of each year from 1865 until he died in 1916. Parallel with many scientific products were poetical ones, or "verses" as he always called them.

Weir Mitchell's appearance deserves as fair a description as possible. To this I can do scant justice, but will sketch briefly the points which impressed me in a close association.

He was endowed with a physique well calculated to make him a marked man in any place or group. He was over 6 feet tall, weighed 180 pounds, was handsomely proportioned, well muscled, graceful and so alert that in his eighties (he died at eighty-six) he astonished friends and casual observers alike by his swift, easy and effective gait. He was at home on any kind of surface and was preeminent in mountain climbing, as evidenced in his activities during the four or five months spent at Bar Harbor in his later years. Many times he dismissed his carriage (he always owned the best of horse flesh) and completed his professional rounds on foot. Often in the coldest winter he would throw off his overcoat and stride along without it. His hair was thick and waving, parted in the middle; he wore a Van Dyke beard; his eyes were a steel blue green, conspicuous for a penetrating and compelling gaze, also cheerfulness and merriment.

These eyes merit a special remark. The very remarkable eyesight he possessed he attributed to the fact that one eye was far sighted and the other near sighted. For a distant view he used the far one and threw the near one out of commission. For near work he reversed this. Thus he was equipped with an extraordinary range of vision. He never wore glasses nor suffered from any eye troubles. He often remarked that the Almightly should so equip all humans. This alternating equipment however, often will not work properly. On one occasion a man from the clinic with one short- and one long-visioned eye suffered outrageously from eye and head pains. It rather provoked Dr. Mitchell that he should get relief only after full correction.

His air of distinction was notable. once an old friend of his remarked to me: "What do you suppose gives Weir the appearance of being such a damned swell?" In dress he was very much of an "exquisite;" not a fop, but always exceedingly well turned out. He took much pains with his tailoring, his "booting," his linen, his gloves. His neckties were indeed rather gay and pronounced, but eminently appropriate.

Among the secretarial duties I assumed were those of conferring with him on this matter of vestiture and corresponding with his European supply houses. It was ludicrous how many men pumped me to learn the addresses of his tailor, shirt and necktie and boot makers. He was always eminently *bien soigné*, even on his mountain climbs or on his salmon river trips. His hands were beautifully shaped and well manicured. They were powerful too; no man excelled him in "casting a fly" for salmon. This was his favorite outdoor sport. Each year, when in America, he spent three weeks in early summer at either the Restigouche, the Metapedia, or later at the Cascapedia salmon fishing clubs.

Was he a little vain of all these gifts of person and of arts? Perhaps so. Anyhow they produced good effects on others, notably his myriad patients, the majority of whom were of a type and training to appreciate them properly.

Among his marked tastes was walking in the country. He would drive to the park or suburbs, even when living in the city, then alight and stride along for miles. He spent about five months in the country each year. His last twenty summers were passed at Bar Harbor, Maine. There he spent each forenoon in writing, mostly fiction or poetry. During afternoons he climbed the mountain trails and paths. In Maine I frequently accompanied him. Often he had several others companions. The only marked impatience I saw him exhibit was when those whom he invited to accompany him got winded and lagged behind. You may be sure he did not invite them again. Often these laggards were from thirty to fifty years younger, hence they could urge no excuse. Those who stayed by him were rewarded by his most delightful talk or monologues. As he grew older his hearing failed. This troubled him little. He was far more interested in what *he* was saying then what *they* might reply.

His memory for interesting things was prodigious. He travelled extensively and met many chief personages of his time; hence his talk was as interesting as a book on events, ancient and modern. It consisted mostly of personal episodes, opinions, conversations. It is a sad loss that they could not have been set down just as he narrated them.

One incident he often cited with glee. When a young man he was suffering from some ailment and, being in Paris, he consulted the great Charcot, who asked suddenly: "Do I understand you come from Philadelphia?" "Yes." "That is fortunate," said Charcot. Then he turned to his desk and started to write, calling back: "I am writing to a friend of mine, a most remarkable physician and I am going to put you under his care. I am offering him some opinions and recommendations." "Will you tell me to whom of my rivals you are referring me?" "Yes, to Dr. S. Weir Mitchell." "Oh," said Dr. Mitchell "I am he." "Ah!" said Charcot, "then you will not need this letter." And he tore it up. Dr. Mitchell declared that he never ceased to regret that he failed to secure and keep that letter to himself about himself.

Another incident: In London he had once been "put up" at a famous club, composed largely of literary men. One day he was lunching there and the only place was at a small table for two, already occupied by one man who much resembled a prosperous farmer. They fell to talking and the name of Thomas Hardy came up. "I am wondering," said the gentleman, "what you think of Hardy's work?" Dr. Mitchell gave his opinion quite frankly and at some length. Fortunately it was not only favorable but laudatory. "Thank you. It is useful for me to learn how he is regarded in your country. I hope I shall meet you again. Good day." And he went. Dr. Mitchell felt a sudden suspicion. He asked the waiter who the gentleman was. "That, sir, is Sir Thomas Hardy."

On one occasion he was travelling in Switzerland with Mrs. Mitchell and her sister, Mrs. Rawle. These ladies were sitting together with a third, in a room giving upon a veranda. Dr. Mitchell had met a distinguished Englishman and they were walking up and down together. The topic of national appearances and characteristics came up. This gentleman remarked: "Your women folk are often charming and beautiful but lack an air of distinction." "Do you think so? I can't agree with you." "Come here and I will illustrate my meaning. Look in that window. Do you observe those three ladies? They are typically high bred Englishwomen in every look, appearance and gesture." "Ah!" said Dr. Mitchell, "I thank you for the compliment. That lady is my wife; that one is her sister; and that one is another American lady."

The middle of the nineteenth century was marked by a rapid awakening to the needs for effective relief of suffering and for well-validated means whereby distresses and handicaps could be reduced. Supply uniformly meets the call of demand. The first is for a leader, one endowed with rare powers of personality. Advances in any line of enterprise come through a general and particular urge or consciousness of needs. Sickness is in the main preventable, as we now realize. As J. Arthur Thompson says: "At least man now-a-days can choose from what diseases he will *not* die." This has been shown by the tide of destructive influences now checked, which had been riotously expanding, such, for example, as the lowered mortality due to control of diseases of malnutrition among infants. Enormous gains are being made in the subjugation of certain infections, notably tuberculosis, "the great white plague." The "black plagues" of the Middle Ages simply ran themselves out, like fires among paper buildings such as occur in the East, in China, Japan and India.

To extend this analogy, our era is that of concrete and steel construction versus wood. The next step is steel and glass. The nineteenth century was the era of the comprehension and cure of so-called diseases of the "nerves," really of bewildered emotions and disabling effects.

As a Master in Health Reestablishment

The real achievements of the pioneer proverbially pass the comprehension of his compeers. Only through open-minded retrospection can his significant contributions become realized and appreciated. This is especially seen in the domain of health reestablishment. Individualism is so despotic among clinicians that each resents evidence of superiority in others. Only retroactively and from the broader visioned laymen do real values become known, also through notable things actually done.

It is my purpose here to attempt for this pioneer what, so far as I know, has never been done. That is to testify from the standpoint of one who worked as his close observer, his clinical secretary and later as chief of clinic, for fifteen years. It was often my privilege to be his literary confidant. He occasionally invited my counsel though I was fully aware this was mere thinking aloud. Even at this late date these recollections should be recorded. They are reviewed through the impressions made upon a young and receptive consciousness. They are thus seen not only in truer perspective but as contrasted with experiences rich through observing the work of other leading neurologists.

The more mature my judgment becomes the more I am convinced that Dr. Mitchell's endowments, his conclusions, methods and results have never been surpassed. And this, too, with full consideration of the enormous advances made through modern laboratory resources. He dealt with few tools of precision, with only crude resources and instrumentalities, though he keenly appreciated all those that were worth while. He devised, assembled, and wove into elastic system the fundamentals of cure. He wrote a learned and historic disquisition on the then known tools, entitled "Instruments of Precision; Ancient and Modern." They were, of course, limited in accuracy though they did the work.

In some of his own pet projects, as "The Venom of Serpents," the research was done conjointly with the Professor of Physiology, Edward T. Reichert, and myself. The illustrations were my job.[1] In these scientific researches he took much pride, as well he might. In them he gave scope to a lucid scientific imagination which, as Thomas Huxley says, is the distinguishing characteristic of genius and intellect.

Dr. Mitchell was the first clinician to surround himself with a group of expert coadjutors and assistants. Among these were Dr. W. W. Keen and later Dr. William J. Taylor in surgery, Dr. William Goodell in gynecology, Dr. William Thomson in ophthalmology, Dr. C. H. Burnett in otology, Dr. Arthur Van Harlingen in dermatology, Dr. Harrison Allen in laryngology, etc. Hence his findings were multiplied as had not been done before. Then there were always his personal assistants who made preliminary examinations, uranalyses, blood tests and counts and such work. All this is common enough now. Then it was pioneer cooperation in remediation.

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[1] See *Smithsonian Reports*, 1886.

Weir Mitchell was vastly more than a master in medicine, a scientific searcher, a pioneer or discoverer of many things. He was a born stimulator of researches by scores of others. He was a marvellous penetrator of human mysteries through errant phases and divagations of illness, and he found new and superior means of relieving them. He was above all else a master in the reestablishment of both mental and physical health, and in raising the individual to higher planes of proficiency than before.

He possessed in large degree a projective imagination; powers of penetrating the obscurities, of illuminating areas of darkness, such as few ever possessed. His instincts were almost unerring; his common sense quite incomparable.

He worked, moreover, from the vantage of what Adolph Meyer calls "psychobiology," from a highly cultured background, a familiarity with world literature, both general and special, such as few had acquired. His social contacts were among the best of his day and generation. His pastimes were in the line of creative literary, poetic and fictional effort. He came of a long line of gentlefolk, of inherited social experiences; and this means much.

When Weir Mitchell attained his mental maturity the world was becoming overburdened with human derelicts, among whom were a large proportion of the more valuable citizens, the finished products of culture and earned proficiency. He had the particular genius to recognize the importance of mental energizing, the potency of exciting the persistent wish as well as the determined effort, and he had preeminently the power of persuasion. Also he devised many practical methods for securing the all-round reestablishment of endowments and for raising the coefficient of capabilities. This forms the highest type of human economics.

As to this phase of his triumphs it must suffice here, to state briefly certain of the facts and to offer a picture of this great personality. His bounteous gifts and diversified enterprises are set forth by his many biographers, both professional and lay.

Next, and perhaps most important, was his peculiar vision as to what cases should at once be subjected to scrutiny by others whose time, opportunities and youthful aptitudes were more abundant than his. Of personal investigation he could and would, had time permitted, have done much more. However he did vicariously far more by choosing the right individuals to carry out to logical conclusions the suggestions he offered. To them, as he grew older and more burdened, he devoted increasing time and energies, aiding their researches efficiently as well as financially.

The query is often put to me: What is the true inwardness or philosophy of Dr. Mitchell's "treatment by rest, isolation and forced feeding?" There should be added "and carefully graduated activities," for that was, and is, of equal potency. He used these measures chiefly for overcoming the effects of obstinate, protracted, complex, often indeterminable depreciations of vigor, both mental and physical, in short, for disentangling woefully "tangled skeins." Wonders indeed he wrought by the artistic use of the simplest, most rational and necessary procedures. They were obvious enough to any one of common sense. Far too many cherish the traditional illusion that marvellous results, in medicine particularly, are the outcome of deep mysteries. They are mystified by what is spread plainly upon the face of Nature. As Oliver Wendell Holmes said of Aggasiz:

> Then Nature the good old nurse
> Took him kindly on her knee.
> See here is a fairy book
> Which God has opened for thee.

The standpoint of reconstructive effort is merely that of lessons in securing the largest results through *nurture* applied in strictest accord with the laws of *nature*. These lessons consist of convalescent procedures and, when essential, of some medicines. Rest measures should interest every human carrying on any important work. They are applicable as forms of radical restitution for working capacities, the joy of living, of securing a return to one's own place long lost in the social scheme, or "in the sun." For such restitution, rest measures are incomparable, indeed essential. Mitchell often remarked that depleted energies can be renewed while one is busy with the day's work. Learn economies by doing work in the right way; take advantage not only of rest periods but save energies through recharging reservoirs. Slow down and stand or sit at ease where speeding up or hurry is not only needless but destructive.

Fashions change in the healing arts but not always for the better; the best of those in vogue today run in cycles. Many of the most potent are neglected while pursuing the more obscure. Dr. Mitchell was often accused by the envious of acting like a fakir because much that he achieved was by force of personality; the sum total of myriad gifts to see, appraise and readapt what had become maladapted. Under his power disordered parts fell into line once more; the guiding forces became renewed, redirected and shown how to resume charge; in short there was economic recharge and compensatory discharge.

When sailing a boat, after a period of storm, stress and confusion a certain necessary rope has become inextricably snarled, what must one do?

Why, make fast one end and throw the whole overboard. Let it drag aft for several hours, subjecting it to the natural forces of traction, through the medium of the gentle resistance of water. Thus the kinks become loosened, twists are overcome till by and by the snarl is either undone, or it can readily be learned what and where a little expert help will complete the job. Just such physical and mental disentanglements can be effected by placing the sufferer in bed, isolated, for several weeks.

In puzzling protracted subversions of the repair and guiding forces, where the consciousness is much confused, there ensues a very real maladaptation of structure, of function and of guiding energies. The common denominator is so-called "nervousness." This is a blend of anxieties, doubts, fears (of bodily disaster) and dreads (loss of *amour propre*, of terror lest one's better self may be unable to fulfill one's expectation of one's self). This is accompanied by excessive all-over contraction, a constant excessive push and pull at the same time. The product is a strained attention, like that of a cat lying in wait for prey. In short, there is vast unconscious futile and wasteful effort. Hence the tortured muscles are held ready to shift quickly into favorable situations and local rigidities are produced. These can be found by gentle touching. The muscle fibers become pitifully wearied, they tremble, "twitter," vibrate. No one so cruelly exhausted can alone unless aided, promptly recover tone through mere food, fluids and medicaments, howsoever well selected. All this is aggravated by numberless bitter disappointments, hopes deferred and all but dead. Thus life becomes one dreary nightmare. The blessed sense of power to help one's self on facing complex and trying situations is lost.

The obvious remedy is to place such a patient at absolute rest for weeks or months. It has taken many months to create these faulty habit conditions; there must be ample time for rest, for all the overstrained, contractured voluntary muscles gradually to let go; for the kinks and twists in the intestines and other internal organs to become de-kinked or unwound; for the misplaced organs to slip again where they belong and for the agitated cells and nerves to come back to mobile equilibrium. And absolute rest does all this.

The patient should be protected from all distractions through "isolation," from the numberless impacts and irritations to the sick consciousness, to the exhausted cells, to nerves and overwrought reflex circuits and their centers. The mind, the emotions, the feelings, are out of gear, sore and hypersensitive. Thus in the peaceful bedchamber is a background re-formed on a new basis.

The only topics which should be discussed with these persons are such as have interested him or her aside from ailments or work, and when at his or her best. There is no mention of his "feelings" as to whether better or worse, or of pains, aches, or harassments. Symptoms are discussed by the doctor and nurse *outside the bedroom.* The few matters which must be mentioned are couched in tactful phrases designed to encourage, to recast aims, purposes, the future outlook.

After learning such peculiarities of taste, antipathies, susceptibilities, as may deserve attention, the routine of foods, massage, bathing, tonic electricity, etc., are sketched out. It may be changed later as deemed desirable with small regard to prejudices or whims. Indeed as many changes as can be helpful are made in order to supply variety, stimulate guessing and avoid monotony.

The nurse is a most important factor in these cases, and choice is made with great care. Under Dr. Mitchell's direction special courses were given at the Infirmary for Nervous Diseases by the chief and his assistants.

Dr. Mitchell was well aware of the harmfulness of too long or too monotonous rest measures. Hence he devised various effective means of "robbing rest of its evils." To relate half of these would fill a book. His was an artistry, a philosophy. He often discussed with his patients the arts, especially his pet arts of poetry and fiction. This his excellently cultured mind through wide reading, much travel, many acquaintances with distinguished and interesting people, enabled him to do. Also his absorbing tastes in beautiful things led to discussions of semi-precious stones, pottery and archeology. From his many adventures he had a fund of inimitable stories. Through all his talks "one eternal purpose ran;" the raising of that particular sick consciousness to higher things.

Reeducation of the Body Movements as an Essential Part of Convalescent Economies

A major, and vital element in these convalescent procedures is the retraining of long disused muscles. Motor intelligence is an important part of general intelligence. It is difficult enough to persuade patients to forego impatience and to remain contentedly in bed. They declare: "You don't understand my temperament; this lying in bed may be all right for some people but it is quite contrary to my constitution, tastes, customs and habits. It will make me all the weaker. I shall grow worse instead of better." After ten or fifteen days nearly everyone "at absolute rest" becomes reconciled. By three weeks they are usually quite contented. A blessed sense of relief comes over them. They are freed from effort, from running their own case, from the accumulated effects of weariness, from the endless calls upon their jaded attention. Nearly every one becomes well pleased to be let alone, and drifts comfortably along contented to have everything done for him, every wish anticipated.

When sufficient improvement has been secured through rest, massage, tonic electricity, bathing, skin friction, nutrition made over, usually some gain in weight (occasionally a large increase), then a sense of muscular vigor and self-confidence returns. Any further rest would bring stagnation and many forms of deterioration. These now surging forces must be given encouragement and guidance. Unless this is done promptly and emphatically full restitution cannot be expected. The majority of disappointments with this form of restitution are due to blunders right here. Now is needed high artistry in restoring muscle intelligence and rehabilitation. To turn the patient back to his or her old ways and haunts with only the impaired self to guide, is to invite whole congeries of bad habits, often cruel deteriorations, and not only in structure. False mental reactions are created, and emotional commotions, sometimes disastrous deteriorations in the personality. Muscle training is mind training and mind training is muscle training. The two cannot be divorced, otherwise no symmetry or poise is possible.

Neglect may produce maladaptations, conflicts, often obstinate or ineradicable perversions. Overexertions may damage the heart. The mere carrying of the body weight may prove too much, may induce breathlessness and faintness as may happen after any compulsory period in bed, as from a broken leg or an operation. The big muscles must be retrained cautiously and gradually. This process is so important that it deserves a fuller description than space permits.

Suffice it to say this retraining is gone about thus: First the patient is made to sit up and place the feet on the floor twice a day; then to sit on a chair for ten minutes, and increase this by five minutes twice daily until he is sitting up for half an hour; then a few steps, then around the room; then out in the hall (in about two weeks). It is often amusing how many excuses are urged to get back into bed. The arms, at the same time, come in for gentle training; then resistance movements with the nurses or masseur. Little by little not only limited movements are insisted on but soon larger, more comprehensive, stronger exertions, long neglected, are urged.

Steady increments in exertion are made until new and unfamiliar but normal movements are performed. The powers often grow beyond any strength formerly known, and within six months or a year the aforetime petted, flabby, inert creature become a handsome example of vigor, capability, proficiency and serenity. Not a few grow to be champions in active sports.

PERSONAL CONTACTS

Dr. Mitchell had a keen appreciation not only of the higher arts, such as poetry, literature, but also of the artistic manifestations of science. He felt and constantly expressed a fondness (it was more like that) for the material or sensual arts, as of dining, feasting, social foregathering, both the intimate and personal, and the organized, in the form of clubs or parties. His essays on "The Madeira Party" were particularly charming and historically instructive.

Along with this, or perhaps as a basis for this, he had a fine, healthy, discriminating appetite for artistic food, especially fruits; also for delicate wines and tobacco. These tastes and indulgences were so well balanced, and his organism was so admirably poised, that they constituted merely an expression of warm, keen humanness.

He made valuable use of these liberal qualitities in his exhortations to patients. He impressed upon their jaded despairing consciousness his own buoyant spirit, rousing them to renewed interest in the worthwhileness of living as contrasted with mere existence or futile resignation. His counsel was not to say, "Thy will be done," but "It is my will as well as my wish to do, to achieve, to help others and to serve." None of his family or friends ever, so far as I know, heard him say he was *tired*.

One incident may illustrate: he relates the story, he had met for the first time when well over eighty, John Bigelow, who lived to well over ninety. Mr. Bigelow asked him: "To what do you attribute your exceptional vigor and buoyancy at your age?" Dr. Mitchell replied: "Mr. Bigelow, you are the older and hence the wiser or better qualified to speak." "Well," said Mr. Bigelow with some justifiable pride, "I never smoked, I never drank anything, and I never take any exercise." Dr. Mitchell replied, with the characteristic twinkle in his bright blue-green eyes: "On the contrary I have smoked since I was a boy, have always been fond of, and indulged moderately in good wine, and in all seasons take much exercise in the open air."

Dr. Mitchell took long trips in our then wild and highly primitive West, camping and hunting and fishing. Also in his later years and to the end of his life each year he fished for salmon, as has already been mentioned. In the score of summers he spent in Bar Harbor, he climbed the mountains almost daily. On these tramps he would keep his pockets filled with caramels and liberally gave them to all who accompanied him. One of the delights of these walks was the occasional rests, more frequent and longer as he passed his eightieth year, when he would smoke a cigar and monologue.

During the last summer of Dr. Mitchell's life of eighty-six years, he came as usual to Bar Harbor after his salmon fishing. I called to pay my respects. He said to me: “John, I hear Prof. Brunnow has contributed to the cutting of a new path which is called “The Orange and Black Trail, in honor of Nassau Hall (Princeton University). Is it an interesting one?” I replied: “Very handsome indeed. However it is extremely steep; in places the rock steps are three or four feet high; all difficult. It takes me nearly three hours to negotiate it. After you have had enough practice in climbing we will essay it together.” “We will go this afternoon.” I turned to his son, Jack, and said: “Really this is too sudden. Your father must have some preliminary training. It is too dangerous till then.” “You can't stop him,” said he. So we needs must start and risk it. During the drive to the entrance I again strove to dissuade him, dreading the severe ordeal for him as well as my responsibility. In the more difficult places I jumped down on the lower parts urging him to steady himself by resting one hand on my shoulder. This he soon refused to do. None the less I tried repeatedly to steady him when climbing up or down a three-foot precipice. This he protested against as unnecessary with increasing insistance. Presently he grew vexed and shouted: “John if you get in my way again I will stick my Alpine stock into your back!” His breathing often became alarmingly labored. Perspiration poured off in floods, but he forged ahead at an extraordinary pace. The trip occupied over four hours, but he declared the whole adventure was delightful and he suffered no harm.

He was witty rather than humorous. This trait appears not only all through his writings, but even more so in his daily doings. When, about forty years ago, the distinguished New York neurologist, Dr. M. Allen Starr (my classmate as it happened) sent him a copy of his book, “Familiar Forms of Nervous Diseases,” he sent back a copy of his own poems and wrote on the fly leaf: “From a falling star to a rising Starr.”

Dr. Mitchell was enthusiastically patriotic. During the War of the Rebellion, as stated, he was in charge of the United States Government Hospital for Injuries to Nerves at Turners Lane. He held in righteous scorn all enemies to the Republic and was frank in expressing his opinions, as the following incident will show:

The late General Henry Kidd Douglas, C.S.A., was a great friend of my wife's family and particularly fond of her, whom he called his “little Emily.” For many years during her childhood, he spent his summers, as her people did, at Bar Harbor, Maine. For a long time he remained away. Then in 1892 he returned. One day the General was on our piazza. Dr. Mitchell also dropped in. They had never met. We introduced these two distinguished men. The General, by the way, was in command of the left wing of General Lee's army at the battle of Appomatox, “the last stand.” The General remarked to Dr. Mitchell, “I have just been telling these old friends of mine about a new historic novel, Richard Carvel, which I believe will become deservedly famous.” “I have wondered,” said Dr. Mitchell, “whether the social coloring in that story is correct.” “Oh indeed yes,” said Douglas, “It certainly is. I was raised in Annapolis as a boy. That is its strongest point." Then he went on to say that the sales of the book had jumped to enormous proportions. Now "Hugh Wynne," by Dr. Mitchell, had then had its day; its sales were then on the wane, as is always the case with such a book. This fulsome praise of a rival book was of course galling. I noticed by Dr. Mitchell's expression that he felt this. He rose abruptly and started for the gate of our grounds. I accompanied him. He asked: "Who is that fellow?" I explained, whereupon he burst out, "Damned unreconstructed rebel!"

Despite Dr. Mitchell's enormous earning power he was singularly indifferent to mere money. Once, as he was within four days of sailing for Europe, a wire came from St. Louis to this effect: "What will you charge to see in consultation here Mr. Blank, one of our most distinguished and wealthy citizens?" Dr. Mitchell bade me answer that he was very sorry, but was sailing in four days and could not possibly come. I said: "Yes, you could. All your affairs are in order. I can attend to what may arise. You can do this and make enough money to pay for your entire trip." "No," said he, "I couldn't risk it." "What shall I reply?" Tell the doctor that I couldn't come for less than some prohibitive price, say $5000." "Oh," said I, "that won't stop them; let me make it $10,000." "Do as you please but make it positive." I did so. The answer was returned immediately: "Come at once." He did so, and made the trip easily.

On another occasion a self-conceited magnate, a prince of finance, came to Dr. Mitchell saying he had just returned from a round of physicians in Europe, none of whom relieved a most distressing vertigo. "And you," he said, "are my last hope." "Well," said Dr. Mitchell, "let me begin with your ears." He immediately did so, found a mass of wax and some fibrous body which had escaped detection, and removed them. "Now," said he, "return tomorrow and let us see." Next day the man came back singing "paeans of joy. His dizziness was gone. "Now how much do I owe you?" "One hundred dollars." This was eagerly paid. "Now let me ask you a question," said the gladsome patient. "Did you know when you did that, it would cure me?" "I felt reasonably certain it would do so." "Then," said the patient, "permit me to say you were a damned fool." "Pray how do you make that out?" "Why if you knew that was the trouble, you should have said to me: I can assuredly cure you. It will cost you ten thousand dollars; no cure, no pay." "Well," said Dr. Mitchell "if that is your gratitude I will expect you to give that sum to the hospital where with others I do my work." "O no," said the man, "that would not be business. You have got your fee and I have got my cure." "Now," said Dr. Mitchell, "you shall have the pleasure of learning something you seem incapable of appreciating. The practice of medicine is a profession, not a trade. You are a mere sordid tradesman."

On another occasion Dr. Mitchell was called to New York in consultation with a famous consultant who shall be nameless. On parting he said: "Look here, Mitchell, in sending in your bill don't you name any paltry sum for this service as you fellows do in Philadelphia. You must make it a suitable charge in accord with our New York standards, which should be at least—so much."

On one of his fishing trips, which brought him to Casco Bay on the Gulf of St. Lawrence, he took a fancy to a huge sea-going canoe, such as the Mic-Mic indians thereabout make and use for deep-sea fishing. It was his fancy to invite selected friends to accompany him in voyages out in Frenchman's Bay, where the same topographic conditions prevail of sea, islands, cliffs, rocks and rushing tides of over eleven feet mean.

My privilege and duty was to take the steering paddle and, in fact, to do the real work of propelling the huge craft. Hence I sat on the high stern seat and propelled, wielding the big paddle. Dr. Mitchell took a smaller paddle, of which there should have been three others to man the canoe properly. Often he became so absorbed in haranguing, he would forget to work. Once he called back to me: "John, why do you always take that choice position and appropriate that noble paddle?" "Weir," said Mrs. Mitchell, "I tell you frankly unless John was seated right there and alert to his job, you would speedily be talking with only your head out of water."

On one of these canoe trips the guest of honor was a distinguished author, an Englishman. Dr. Mitchell got to the topic of fiction. When about to make an audacious remark his whole face took on a quizzical light, and he remarked: "The fact is, and pretty widely acknowledged, that there have been produced only two great novels in the English language: "Henry Esmond" and "Hugh Wynne," and that the odds are in favor of the book about the fighting Quaker."

The one thing sure to rouse Dr. Mitchell's patriotic indignation and fiercer candor was the display of arrogance and self-seeking in someone in whom he deemed it unjustified. No vast financier so enraged him as one who had made a fortune out of some nostrum, some quack or highly advertised product.

Adjoining the front hall, his offices were on the east, and Mrs. Mitchell had on the west a little private reception room. Into this were admitted those who, for any good reason, deserved the honor of an immediate interview. Into this room forced his way on one occasion a huge flamboyant man who sent in word he was Mr. ———. He had written for an appointment. Dr. Mitchell said to me: "John, go and see who the fellow is. I have no recollection of him." This person deigned to admit he was of peculiar importance. He would not reveal his identity to me. So I reported with suppressed amusement at the impending denouement. Dr. Mitchell strode into the little room in high color and demanded to know who he was. Thereupon he stated with some pride he was the proprietor of St. Jacob's oil, whose name and healing virtues were then blazed on fences along highways. "Well," said Dr. Mitchell "that's the best of reasons for not meeting you at all. The incident is closed."

The one insuperable difficulty Dr. Mitchell admitted was in writing plainly and gracefully. He much admired fine chirography, often remarking upon a handsomely inscribed note, that this was the sure index of gentility." When some one mentioned, with apologies, that they could not read notes from him by his own hand, his reply was: "Alas! I regret I am the prince of kakographists. In no direction have I striven more diligently to win a mastery over rebellious powers."

A certain nervous gentleman numbered among his disablements the affliction of inability to use his legs in walking. Dr. Mitchell shrewdly suspected him of malingering, so he laid a trap. The nurse was instructed to dust some lamp black over the floor near his bed, and afterwards to leave the room from time to time. She did so and lo! his feet showed plainly sooty spots all over the soles.

A certain lady declared she could not digest raw oysters, that "they made her so nauseated she could not even keep them on her stomach." Dr. Mitchell told her emphatically there was no good reason for this ultrasensitiveness and that she must overcome such habits. It persisted, so he had the nurse arrange to have ready large bivalves for him on one occasion. He handed her one. It went down after much tears and wailing, and promptly came up. He forked this adventurous gastropod and presented it to her a second time: "Now you will swallow this repeatedly until it rests quietly where it belongs." Horror and floods of tears, Up it came. Again after pleading and revolt it reappeared. Finally wholesome rage ensued (after a desirable form of reaction to whimpering and rebellion was aroused) and the oyster rested in its little bed.

A portly, richly dressed, self-important clergyman consulted Dr. Mitchell. After several careful examinations and minute instructions the man of God was about to go on his way; bidding his adviser good-bye quite effusively as he was about to leave. "Wait a moment, said Dr. Mitchell, "you have forgotten something." "What may that be?" asked the cleric, "to what do you refer?" "Why," said Dr. Mitchell, "to offer to pay my fee." "Oh, I understood you did not make charges to men of my cloth." "That is quite true, but I prefer to tell that myself."

As illustrative of his clear, instructive appreciation of flabby personalities and what tendencies needed modification or rectification, here is a sketch:

He had a relative, a school girl, whom he called "Ba," who occasionally dropped into his office when I was present, just before his luncheon. She was the quintessence of refinement, placidity, amiability, acquiescence to conventionalized rules of conduct and behavior; also absence of initiative, for she was at peace in an overprotected life, except when she might possibly accuse herself of unwittingly departing from the narrow, colorless, even tenor of a carefully prepared routine.

He would often twit her jocosely on her uneventfulness. "Well, Ba, I hope you were late to school today, and were healthily mischievous and obstinate or rebellious?" "Oh no, Cousin Weir, I was particularly good and received the highest marks." Then he spoke to this effect: "That is a dreadful state of affairs. Do turn over a new leaf and assert your independence, to all and sundry. You should make yourself felt in your world, wake things up; create a noise; let people know you are about; do things out of a rut." Of course she didn't obey, and thereby won much self-pleasing mid-Victorian merit.

Dr. Mitchell had small relish for jokes on himself. Once I read with amusement, in a western paper, comments on his then latest book to the effect: "The distinguished physician, S. Weir Mitchell has just published a charming little book, a tale of the wild woods, entitled: "Afar in the Forest, or Adventures in a Lumber Camp." Being a physician a more fitting subtitle might have been: Adventures in the Lumbar Regions of the Small of the Back Woods." This I read to him and he grunted: "Grrr! Grrr! "

A certain prominent New York physician who was also a strict Roman Catholic had a favorite but "nervous" daughter, whose maladies had baffled all examiners. He entrusted her to Dr. Mitchell's care. In a letter he requested Dr. Mitchell to be sure to select a Roman Catholic nurse. Dr. Mitchell wrote back: "I have your advice in this matter of the nurse. However, in full recognition of her best interests and more certain recovery I have selected for her a pink-cheeked, jolly Presbyterian."

While he was in Bar Harbor there often followed him some patients desiring his opinion. He referred these to me for history taking (anamnesis) and preliminary examinations. Once a decrepit old gentleman applied. When we met I went in to deliver my report. He asked: "What do you make of the case, John?" I replied: "There seems to be very little, if any, gravity in his condition. He is a banker in a small country town; lives next door to the bank, and he never stirs afoot except to his office and back again. etc." Then he said: "Call him in." "Well, my friend, my assistant after a careful survey has reported that you have no more grave a condition than a total neglect of your muscles. My chief advice is that you get a bicycle, learn to ride it, and do so every day; gradually increasing your distances and elevations."

MARY CADWALADER MITCHELL

No review of this great citizen would be complete without consideration of his life companion who, before her marriage, was Mary Cadwalader. Here was a personality equal, and in some ways superior, to that of her husband. She was born of the true aristocracy which extended from her Welsh forbears to her parents. She possessed in eminent degree those qualities needed to supplement and enhance her husband's own. She was one of the most gracious, thoughtful, tactful, delightful and witty of gentlewomen and hostesses. She fitted into every aspect of Dr. Mitchell's life as head of an interesting domestic and social group. She was accomplished in just those graces which should crown a leader in social circles from the highest to the humblest.

Her end was so unique and beautifully illustrative of her qualities it should be briefly mentioned. When Dr. Mitchell died at the age of eighty-six she was seventy-eight. She discharged with extraordinary thoroughness all the obligations of the funeral of so prominent and beloved a man. As funeral mementos came pouring in (about five hundred; it was my duty to count and record them) she wrote thanks to each and every donor in her exquisite hand. She paid every bill up to date and did a thousand other gracious acts. Then, when all was complete, four days afterwards, she laid her head down and passed on to her deserved reward.

AN ETRUSCAN BRONZE STATUETTE DEPICTING A POSTERIOR SUPERIOR DISLOCATION OF THE HIP

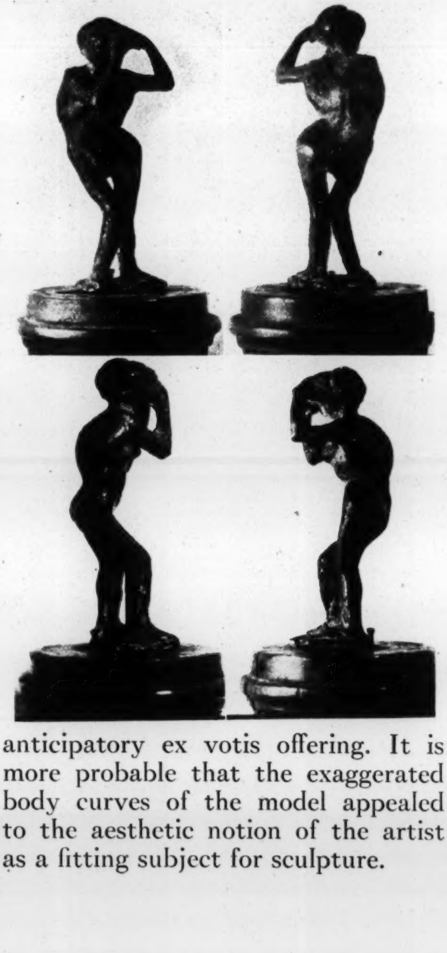
By G. W. WAGONER, M.D.

PHILADELPHIA

AMONG a large collection of antique bronze figures, graciously shown me by Mr. Guido di Vincenzo, a Philadelphian antiquarian, was found the bronze here illustrated. The piece is Etruscan and was probably executed about 350 B.C.

The figure is that of an adult woman arranging her hair. It is 73 mm. in height. The pelvis is tilted to the right, throwing the left hip and buttock into prominence. The left femoral head apparently lies above and behind the acetabulum. Despite an apparent shortening of the right lower extremity amounting to 5 mm. both lower extremities are of equal length and measure 39 mm. A scoliosis of the thoracicolumbar spine is present with the convexity to the right and is associated with a slight counterclockwise rotation of the vertebral column. The left anterior thorax and breast are prominent; the right are flattened. Posteriorly the left chest is flat whereas the right projects laterally. The right shoulder is slightly higher than the left.

This description justifies the assumption that the figure is a statuette of a model who was deformed by a posterior superior dislocation of the left hip. In view of the gracefulness of posture and perfection of workmanship it seems unlikely that this statuette was created to serve as an anticipatory ex votis offering. It is more probable that the exaggerated body curves of the model appealed to the aesthetic notion of the artist as a fitting subject for sculpture.



DAVID RAMSAY

PHYSICIAN, PATRIOT AND HISTORIAN

By CARNES WEEKS, M.D.

NEW YORK

AMONG the distinguished men in the early history of South Carolina there is one certainly about whom we should know more. David Ramsay is remembered today as an historian, but there is more to his interesting life than this. He was a successful physician, an accomplished author and an ardent patriot, who served his country most ably during the stirring times of our Revolutionary War. The state in which he lived for forty-one years should be proud of his name and we may well attempt to shake the dust that has clouded his memory these many years and discover for ourselves what a splendid and interesting old fellow he was.

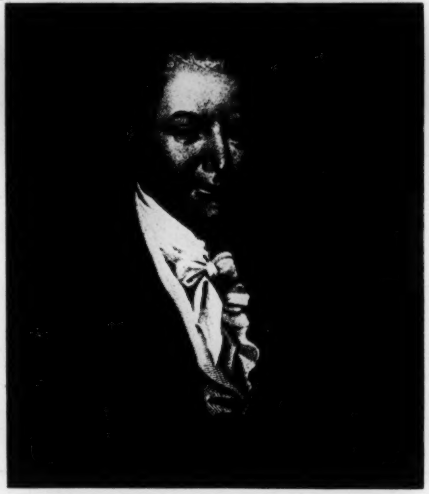
Born on April 2, 1749 in Lancaster County, Pennsylvania, of good Irish stock, his father a successful farmer, Dr. Ramsay was fortunate in obtaining a good, liberal education. He attended the usual schools of that period and apparently was rather precocious for when but twelve years old he was so far advanced that he acted as tutor at a public school. It was remembered as an amusing sight to see this child sitting on the knees of older boys and helping them in difficult passages of translation. At fourteen he entered Princeton in the Sophomore class, receiving his B.A. in 1765. Of his life at college we know very little. His wife, Martha Ramsay, writing a good many years later to her son David Ramsay, Jr. at Princeton says: "Do not forget that your father distinguished himself at that institution." He had a remarkably tenacious memory, an unusual knowledge of history and the classics, and was remembered for his keen sense of humor.

He proceeded to the study of medicine in 1767 under Dr. Bond of Philadelphia, receiving his degree of Bachelor of Physic in 1772 from the College of Pennsylvania, whose medical department was then but seven years old. The only reference to him at medical school was that he delivered an oration on "The Comparative State of the Ancient and Modern Practice of Medicine" which was "replete with humorous observations, pungent satire on quackery, and several touches of purest attic wit." We know that he formed a firm friendship with a famous man, then professor of chemistry, which lasted till forty-one years later when he delivered his "Eulogium upon Benjamin Rush" who died in 1813. When Dr. Ramsay moved to Charleston, South Carolina, in 1774, he was recommended to the profession of that state by Dr. Rush as the best student that had yet graduated from the University of Pennsylvania. During the remaining years of his life, which he was destined to spend in Charleston, he followed the precepts and practices of his more famous friend.

He believed in subduing disease at once by a single, vigorous remedy, probably by means of mercury and copious bleeding, two great weapons of Dr. Rush's. We know that Dr. Ramsay "was considered able in the treatment of Yellow Fever and had several cures to his credit in cases of wounds received from poisonous animals"; what animals are not mentioned, however. His medical activities during the Revolution were not as important as his legislative ones, but he apparently served with the continental army as surgeon for a short period and was present at the siege of Savannah in 1779, which disastrous action he describes as an eyewitness in his "History of the Revolution in South Carolina." At some time during this period he was elected vice-president of the Medical Society of South Carolina.

Undoubtedly Dr. Ramsay's greatest claim to medical fame is in his medical writings; the most interesting being a paper with the title, "A Review of the Improvements, Progress and State of Medicine in the eighteenth century. Read on the first day of the nineteenth century, before the Medical Society of South Carolina." It was dedicated to Rush, the American Sydenham. In this work he brings into play his unusual historical ability in portraying the development of medicine in this century and sums up in masterly style its present state at that time, January 1800. It shows that the author was exceedingly well read for those times on medical subjects. What is most astonishing is his peculiar ability to comprehend the real contributions to science, most of them but recently discovered, living as he did so close to those times. This short paper is heartily recommended and a brief review at present will not be without interest.

Anatomy is the first subject dealt with, in connection with the Hunters, William and John, and their establishment of the first systematic anatomical school in England. The improvement in the art of anatomical injection is discussed and he says that "now it is in the power of gentlemen to study anatomy without disobliging their senses." He attributes the rise of the art of surgery to the general increase in the knowledge of this subject. He quotes the famous case of Felix, the French surgeon who, but one hundred and fourteen years before, obtained everlasting fame by curing Louis XIV of a fistula in ano, "a cure," he says, "that could be obtained by scores of young men in this infant country of the United States." Some of the high spots are: Morgagni in Pathology with his famous "De Causis et Sedibus Morborum," 1761; the importance of animal experimentation; digitalis and



David Ramsay

FIG. 1.

the article by Withering in 1785; the more general use of fresh air and sunshine in the cure of disease.

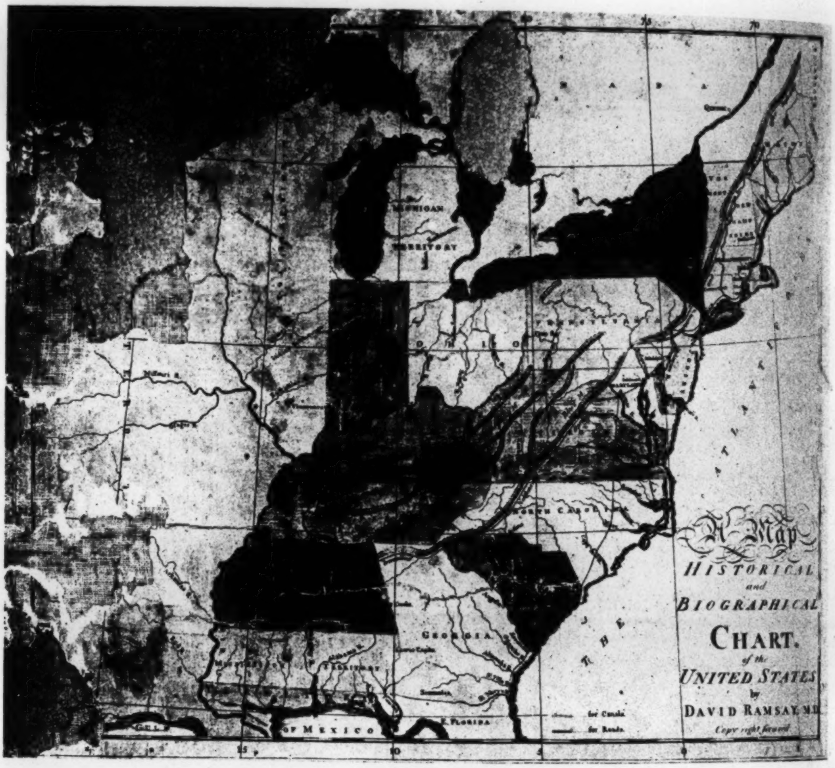


FIG. 2.

Jenner's article in 1798, concerning the prevention of smallpox by the inoculation of cowpox, is highly praised and he mentions the fact that this procedure had been instituted in the United States but a few months before. James Lind, with his paper on the cure of scurvy with the introduction of fruit juices, is called the father of nautical medicine. Dr. Ramsay was intensely interested in Public Health and he alludes with pride to the growth of intelligence among the people concerning "the means of obviating infection and contagion." He notes the diminution in the plague and allied diseases in the 18th century in all countries recognizing the probable association with dirt and filth.

The early publications in this country are mentioned; a treatise by Dr. Cadwalader on the "Iliac Passion," concerning the poisoning by lead due to rum distilled through coils of lead pipe; a treatise on pleurisy by Dr. Tennent of Virginia; a book on surgery entitled "Plain Remarks on Wounds and Fractures" by Dr. John Jones for the benefit of the surgeons of the continental army. It is interesting to note that this book at the outbreak of the Revolution was the only medical volume by an American author. The first medical lectures in America were given in 1762 on anatomy by William Shippen, who at the time of Dr. Ramsay's article was professor of anatomy and surgery in the University of Pennsylvania. He mentions the establishment of medical schools in Philadelphia, 1765; New York, 1768; Hanover, 1769; and Cambridge, 1782. The establishment of the *Medical Repository*, the first medical periodical in this country, delights him as he had always been a strong advocate of such a publication. In fact he did publish in 1803 a small pamphlet entitled "The Charleston Medical Register for the Year 1802." It was an attempt to urge others to do the same, "for," he says, "if one physician in each of the towns and cities of the United States, were to favor the public with an annual account of the state of diseases and the circumstances connected with them, there would, in time, be an accumulation of materials, from which we might obtain

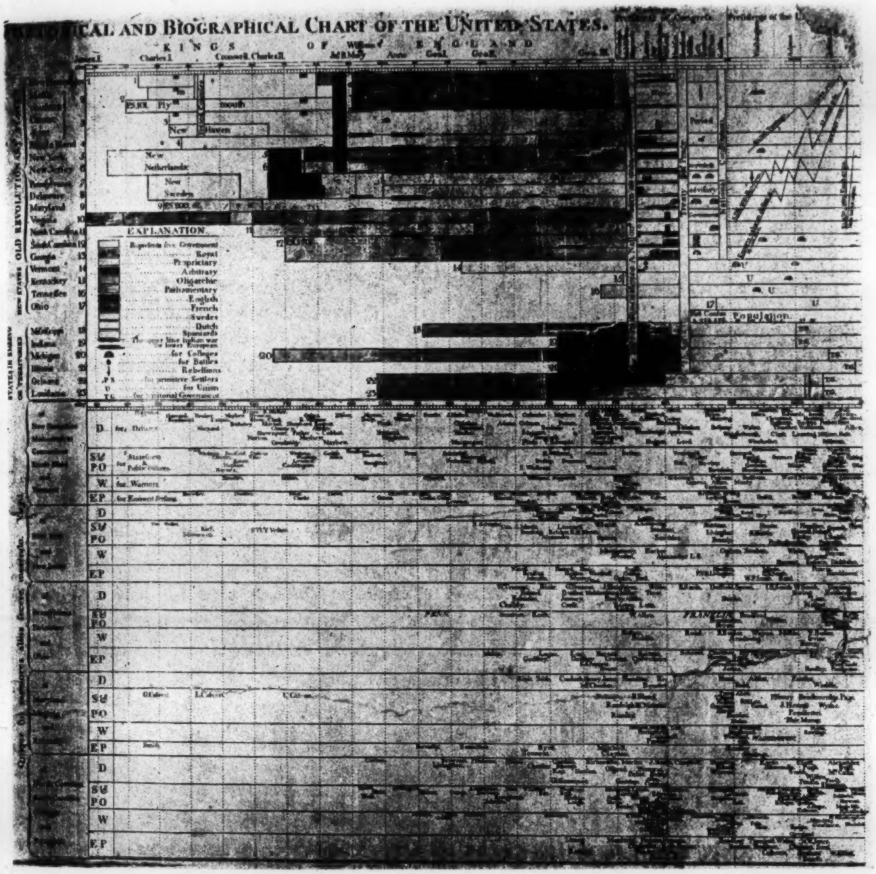


FIG. 3.

innumerable advantages." In his paper he describes with the greatest detail four epidemics that occurred in that year: smallpox, yellow fever, measles, and influenza. He mentions the interesting fact that influenza usually attacked those that had had measles. Discussing yellow fever he states that "no instance can be recollected in which there was any ground to suppose that this disease was either imported or has been contagious. No physician, nurse, nor other person exposed to contagion, from their intercourse with persons laboring under yellow fever, caught the disease." He mentions the introduction of cowpox inoculation into Charleston in this year and the mildness of its course, emphasizing the need for compulsory vaccination. He says the natural cowpox is unknown to American cattle and therefore that the danger of losing the succession of the disease in man is great.

Fig. 4. David Ramsey.

Another interesting pamphlet that he published is a "Sketch of the Soil, Climate, Weather, and Diseases of South Carolina." In this he laments the fact that there has been abundant evidence of the intemperate use of spiritous liquors; "four sots," he says, "expired suddenly, in one hot day last summer, in one square of this city. The bilious remitting and intermitting fevers have increased but the pleurisies and smallpox are now trifling. The dry belly-ache has in a great measure disappeared; perhaps this may be in part owing to the increasing disuse of punch." He stresses the dangers of stagnant water in relation to fever and the importance of draining swamp lands.

Dr. Ramsay, aside from his practice and medical writings, devoted considerable time and interest to public activities. From 1776 till the end of the war in 1783 he was a member of the legislature of South Carolina and for two of these years one of the privy council. He was from the first a strong advocate of American independence and he wrote exceedingly well a number of pamphlets on this subject. One of these, written during the Revolution, the only one which I have unfortunately been unable to obtain, was a "Sermon on Tea," the text taken from Paul's Epistle to the Colossians, 2nd chapter, 21st verse: "Touch not, taste not, handle not." This was, apparently, a humorous caricature of the whole situation of tea and taxation. It must be remembered that during this period a great portion of the population, especially in the southern states, were still on the fence as to which side they should join. On the 4th of July, 1778 he delivered an oration, the first ever delivered in the United States on the Anniversary of American

Independence. In this he tried to convince the people that the new government was much to be preferred to the royal one.

In the preface of one of his books on history published at a later period, he describes on a Sunday morning in August 1780, a group of soldiers entering his house and dragging him to a prison ship in which he was taken as a prisoner of war to the British garrison at St. Augustine. Charleston had surrendered to Sir Henry Clinton in May of 1780 and he had apparently been accused by Lord Cornwallis of promoting a spirit of revolt among the inhabitants and had been banished from Charleston. Eleven months later, however, in an exchange of prisoners he was returned to his home.

In February, 1782 Dr. Ramsay was elected a member of the continental congress from the Charleston district and served with distinction till the end of the war in 1783. He was again elected in 1785 and acted as president of this congress for one year during the illness of John Hancock.

On July 4, 1794 he delivered another oration on the anniversary of American independence, at that time being the president of the Senate of South Carolina. It is a most interesting document and one that can be read today with mingled feelings. He says that "the new country has hit on a happy medium between despotism and anarchy: every citizen is free, the press is free. Pardon me illustrious Washington that I have inwardly rejoiced on seeing thy much respected name abused in our newspaper." He praises religious freedom and stresses the need for union but with the respect for the rights of states.

David Ramsay has been called the father of American history. In light of rather recent knowledge concerning his historical writing he may have to be called rather the step-father. Nevertheless he was an able writer and an ardent lover of history and his chief fame today is as an historian. In 1785 he published a "History of the Revolution in South Carolina;" in 1790 a "History of the American Revolution." The material for both of these works was collected while he attended Congress, enabling him, as he states, to examine all of the original state documents and letters pertaining to the war. Dr. Franklin and Dr. Witherspoon were close friends of his and gave him considerable help in his project. He also is reported as having visited Washington at Mt. Vernon in order to collect facts for his work. In spite of all this it has been discovered by Orin Grant Libby that Dr. Ramsay plagiarized extensively from two sources: first from Gordon's "History of the Rise, Progress and Establishment of the Independence of the United States of America," printed in London in 1788; and second from the *British Annual Register*. Mr. Libby had sometime earlier proved that Gordon had plagiarized from the *Annual Register* and now it appears that Ramsay apparently drew from both sources. He quotes paragraphs, both short and long, from all three of these accounts and there can be no doubt that considerable stealing has been done. I think that the interesting outcome of all this is, sad as it may be for the fame of Dr. Ramsay, that a great deal of the history of our revolution has been founded on the writings of these two men; Ramsay, the first American to write a history of the war; Gordon the first Englishman; and apparently the source of both was really a British magazine which, to say the least, must have been slightly prejudiced. As Mr. Libby says, these gentlemen were living in an age of successfully plagiarized histories and what we really need is an authoritative account of our revolution.

What effect this plagiarism has on Dr. Ramsay's other histories I am not enough of a student of history to judge. My only defense in his favor is a contemporary quotation that "Dr. Ramsay's story of the revolution in the scenes of which he was a participant has received the highest praise for its fullness and accuracy. General Greene vouched for its truthfulness and Lafayette said: 'he has put everything into it; he abbreviates like a Flavus.'"

In January, 1800 he delivered an oration on the death of "Lieutenant-General George Washington" who had died the month previously, and the following year, 1801, published his life of the same man. The latter was used for many years in American schools and was translated into several foreign languages as were most of his histories.

Some of Dr. Ramsay's other writings were: "An Oration on the Cession of Louisiana," 1804; "History of South Carolina," 1808; "History of the United States;" "Universal History Americanised," 1819; "A brief History of the Independent or Congregational Church in Charleston," 1815; "Memoirs of the Life of Martha Laurens Ramsay," 1815; "A Chronological Table of the Principal Events which have taken place in the English Colonies, Now United States, from 1607 till 1810, Explanatory of and Supplementary to Dr. Ramsay's Map, Historical and Biographical Chart of the United States, and noticing the Progress of Improvement in the Same," 1811. This last is worthy of further comment. Apparently his idea was to introduce a graphic method of studying history and certainly this combination of map and chart gives more information concerning the early days of this country than any other document of the same size. On examination of this interesting paper we find that the portion to the left has been given up to a map of the eastern part of the United States. On this Dr. Ramsay traced what he called "A Road of Health," which runs near the foot of the mountains from Tennessee through Georgia, South and North Carolina, Virginia, Pennsylvania, New York and on up through the New England states to Canada. Under this road he has written "to be travelled northwardly after April and southwardly after September" and was to be traversed by "invalids, particularly such as labor under consumptive complaints." To the right of this map is an ingenious chart divided into an upper historical section and a lower biographical one. One can derive from this the following information: the date of the first settlements of each colony by the beginning of the square corresponding with the scale of dates above; the unions and separations of colonies; the change in goverment is determined by the change in color of the square; the duration and extent of the war in each state; the rise and fall of tonnage, revenue, and exports, since the establishment of the new constitution in 1789. The biographical portion is devoted to the names of men who have been famous in our early history; the name of each man is placed in such a manner that the state from which he came and his date are easily determined. The book which should accompany this map gives an excellent chronological table of events from the foundation of the first colony to the year 1808.

Of Dr. Ramsay's first wife we have no record, but in 1787 he was married to Martha, daughter of Henry Laurens the patriot and president of the first continental congress. She gave him eleven children, eight of whom survived. Mrs. Ramsay was an unusually fine and able woman; what little we know of her is gathered from her "Memoirs" which her husband published in 1815. She transcribed for him all his voluminous works on history and trained her daughters to do the same. Her letters in 1811 to her son David at Princeton are amusing; she writes "make yourself a party in no broils, and mind your own business"; and "you will prevent your adding yourself to the list of Carolinian triflers whose conduct has brought a college such as Princeton into disrepute." In another letter, referring to a student at Yale: "I hear one may live well at New Haven for $400 a year." Times were apparently hard and she writes "that it is impossible to collect money and with great difficulty Dr. Ramsay has procured a $50 bill which will pass in the northern states." Her husband appeared to have the same failings in finance as a great many doctors and what money he did not give away he lost in foolish speculation; one item that has been recorded was $30,000. Mrs. Ramsay died in 1811 to be followed in a few years by her husband.

Dr. Ramsay's death was dramatic; he was shot in the back by one of his former patients who had been declared insane by Dr. Ramsay himself. The murderer, a tailor by trade, had been jailed for assaulting his own lawyer whom he had employed to settle some imaginary grievances. Dr. Ramsay had been appointed by the court to pass on the man's sanity. As soon as he was at large he proceeded to shoot Dr. Ramsay with a large horse-pistol charged with three bullets; two of these took effect and the following day, May 15, 1815, he died. As he was being carried home he declared that if he should die, he considered the unfortunate man a lunatic and therefore free from guilt.

AN INCIDENT IN EARLY SOUTH CAROLINA MEDICINE

By JOSEPH IOOR WARING, M.D.

CHARLESTON, S. C.

WHEN doctors complain, as they do, and will do, of the hardships of medical practice and the poor pecuniary returns therefrom, they only repeat with feeling a story that has been heard for very many years. Locally, at least, there have been in the past public and organized complaints by the profession, but judging from the public outcry which greeted one of these early and apparently reasonable declarations of the rights of the practitioner, not much sympathy for his hardships was to be gained among the early inhabitants of Charles Town.

In the *South Carolina Gazette* of June 5, 1755, appears the following:

> On Monday the 2nd Instant, met at Mr. Gordon's, the Faculty of Physic (Doct. John Moultrie, President) for the better Support of the Dignity, the Privileges, and Emoluments of their Humane Art . . . etc.
>
> They considering that they are often called out under the greatest Inclemencies of the Weather, sometimes merely to gratify the Patient, and sometimes when no Medicines are required, or such only as the Families themselves are provided with; and likewise that they are often slowly and seldom sufficiently paid, for their sollicitous Care in promoting the greatest of all Temporal Blessings, nay that without which Life itself would be Misery, viz. the Health of their Fellow Citizens; neither can they think the Payment of an Apothecary's Bill a sufficient Reward, to him who acts in the Three distinct Offices of Physic, Surgery, and Pharmacy.
>
> They therefore have unanimously resolved, that after the Tenth Instant, they will give no further attendance without a reasonable Fee, paid at the first Visit, and at every other Visit, during the Course of their Attendance.
>
> Published by Order of the President
> William Murray, Secretary.

In reply to this, there appeared in the next weekly issue of the newspaper a rather caustic comment on the Faculty of Physic and on medical men in general. "Freeholder," protesting against the increase in fees and the doctors' "principle of Gain," went on further to say:

> I shall only observe, that it has often been a Question, whether Lawyers or Physicians did the greatest Mischief to Men; one impairs their Estates, the other their Health and Life, and that I have somewhere read of a Man who fancied himself sick, and sent for his Physician, who asking the Patient, *if he eat well?* he answered: Yes. *Do you drink well?* Yes: *Do you sleep well?* He still answered Yes. *Very well,* say'd the Doctor, *I'll send you something to remove these Disorders.* The following Lines of a celebrated Poet and Physician may not be an improper conclusion,
>
> Charles Town and all her passing bells can tell
> What mighty Numbers by the Faculty have fell:
> With Pen & Ink in Hand, they've pushed to that Degree,
> They scarce have left a Wretch to give a Fee.
> Some fell by Laudanum, and some by Steel;
> But Death in Ambush lay in every Pill.
> For save or kill, this Privilege they claim,
> Tho' Merit suffers, the Reward's the same.

Shortly thereafter another citizen, who likewise signed himself as "A Freeholder," took up the cudgels in defence of the Faculty, and spoke feelingly of the fatigue incident to paying calls in the "scorching climate," of the unnecessary calls to "answer some frivolous question," and of the ingratitude of the public after the past dangers from illness and epidemics. The Faculty, he said, would not answer the attacks in writing, and were still willing to "attend the many poor Families with the same Diligence as formerly," and to "attend Negroes on the old Footing." In reply to the story related in the previous letter, he remarked of the author that:

> His Sneer on the Practice by the little Story, is unfairly told, for the Conclusion was "That the Physician, who was a Man of Humour, and knew the hypochondriacal Man's Foible, effectually cured him with a few Pills, made of Crumb of Bread."

Other letters pro and con followed this defence. Several additional pieces of doggerel were brought out in an effort to malign the medical men. Two of them read as follows:

A Song by O. O.

The Doctors in Charles Town have lately agreed
Not to visit their Patients until they're new fee'd
From whence this Suggestion most truly arises,
What Fee must be paid? And what the New Price is?
Derry down down down derry down.

The People alarmed at such a Proceeding
Resolve (tho' in Fevers) not to be bleeding
And rather than send for the Doctors advice
Take Care they don't die, as Cats do kill mice.
Derry down etc.

The Doctors for Dollars are grown very craving;
The People on Course, must take Care to be saving;
So if by bad Chance, you should meet a Disaster
To the Doctor too freely don't give your Piaster.
Derry down etc.

Good folks pray be wise, take this for a Warning;
Don't send for the Doctors till Death is alarming;
The less Use you have with their Pills and their Plasters
You'll find in your Pockets more Gold and Piastres.

. . . . . .

When sad Distempers rage, then Doctors strive
Which Man amongst 'em most of all shall thrive.
This is the Season for their Harvest Fees
From whence Honey they draw as sweet as Bees.

If each Man would in his own Judgment go,
No Doctors Drugs needs he to taste or know.
The various things we from the Doctors take,
Make not our Heads alone, but Hearts too, ache.

Should we from Physic and their Shops take Course
Surely our Healths and Minds would be no worse.
He who his Days would fain prolong, and live,
From Doctors nothing take—but to them give.

The argument finally died without any public response by the Faculty, and more than likely without any radical change in the older system of paying calls and collecting fees. Possibly the Charles Town practitioners of the time did not enjoy the greatest popularity with some of the citizens, for from time to time other thrusts appeared in the *Gazette*. Thus in January, 1754 the following had appeared:

> Qu. Of the three Professions, Law, Physic, and Divinity, which is the most desirable, not only in a moral but political sense.
>
> Ans. Physic: Because the Physician knows himself both inward and outward,

and consequently must conform more strictly to that Lesson of the Oracle *nosce teipsum;* and he undoubtedly is the most useful in a political View, Adrian the VIth speaks thus—Were it not, says he, for the Physician, Men would live so long, and grow so thick, that one could not live for the other, and he makes the Earth cover all his Faults.

In amplification of this answer, a letter followed, vilifying Physic, and asking: "What Man can *live long* and grow *thick,* under a Diet of Pills, Boluses, Sage-Tea, and Water Gruel?" Despite the fact that this was a period when Lionel Chalmers, John Lining, Alexander Garden, and the Moultries, all men of reputation, were active in Charles Town, another enemy of the Faculty came out with the assertion that "it is doubted, whether any of them in Charles Town, save one, were bred more than Apothecaries or Surgeons." Perhaps if the practitioners of the day were no better as doctors than their assailants were as poets, there might have been some obvious justification for the attacks which were directed against them.

[From Petrus Franciscus Phrygius: Commentarii. Lugduni, 1644.]

EDITORIAL

THE HOMES OF JOHN HUNTER IN LONDON

The celebration of the bicentenary of the birth of John Hunter produced a great deal of interesting material bearing on his career. Dr. George C. Peachey, the author of the authoritative "Memoir of William and John Hunter" (1924), read as the Thomas Vicary Lecture a most delightful account of the houses which John Hunter occupied at one time or another while living in London. Leaving the paternal roof at Long Calderwood in 1748 Hunter passed a month or so with his married sister, Janet, in Glasgow and then went to London to work in his brother's dissecting room. On his arrival Peachey thinks he probably took up his residence with William in the house of Mrs. James Douglas in Hatton Garden. William had been the pupil of her late husband and was the fiancé of her daughter who died before their marriage could be celebrated. William Hunter was not only teaching anatomy but after the death of Douglas acquired a large obstetric practice, and was for a time surgeon man-midwife to the Middlesex Hospital. In 1749 he was elected to the staff of the Hospital for Lying-In-Women in Holborn and in the same year he took over a large house in the Great Piazza, Covent Garden, which he used as his residence and in which were also lodged his brother John and his house pupils. His dissecting room he continued to maintain in the Little Piazza, Covent Garden. Peachey thinks that this move shows that William Hunter had grasepd the importance of the principle, that for the safety of the women he attended, his practice should not be conducted from premises which served at the same time for dissections. John Hunter continued to reside in this house of his brother William's until he sailed as a surgeon in the army on the expedition to Belle Isle in the spring of 1761. On his return to England two years later John lodged in the house of William Jones, a druggist in Russell Street, Covent Garden. After the lapse of another two years he purchased some land at Earl's Court on which he built a very handsome house, and within a year later he also occupied a house in Golden Square. Earl's Court was really a country place. On its grounds he was able to keep the many animals of which he studied the habits and among its furnishings was the copper kettle in which he boiled their bones, as well as those of the Irish Giant, to add to his osteological collection.

Until 1778 John Hunter gave his anatomical courses in his brother William's Anatomical Theatre in Great Windmill Street, but in that year he changed and henceforth gave them at No. 28, in the Haymarket, then a picture gallery belonging to a Mr. Greenwood, and on the site of the present Haymarket Stores. After William's death in 1783 John leased a large house in Leicester Square with the premises behind it, which ran through to Castle Street. Here he had quarters for his assistants, dissecting and preparation rooms, a printing press, and his offices. William Clifts' manuscript diary contains a plan of the house from which the arrangement of all those various appartments may be learned. After his tragic death at St. George's Hospital his remains were conveyed in a sedan chair to his late residence, whence they were taken for interment in the vault of St. Martin-in-the-Fields, where they were found by Frank Buckland in 1859, and removed to their present resting place in Westminster Abbey.[1]

On February 11, 1928, Miss Helen Hunter-Baillie died, at the age of eighty-five. At the time of her death she owned Long Calderwood, the old farmhouse at East Kilbride, a few miles from Glasgow, in which William and John Hunter were born and passed their early youth. Her father, William Hunter-Baillie, was the son of Dr. Matthew Baillie, the child of Dorothea Hunter, the Hunters' sister. She had preserved the old family house in excellent condition and it was always shown to interested visitors with the greatest kindness and courtesy. Now that Miss Hunter-Baillie is gone it is greatly to be hoped that steps will be taken to preserve the house as a perpetual memorial of the two great Scotchmen who were born under its roof.

There has been much dispute as to the day of John Hunter's birth. The parish register gives it as the thirteenth of February, 1728. Hunter himself considered it as February the fourteenth, and that is the day chosen by the Royal College of Surgeons for the day of the Hunterian Oration. In a catalogue of the Mss. in the Library of the Royal College of Surgeons which has just been edited by Victor G. Plarr, the Librarian to the College, he describes a commonplace book which is in the collection. It was written by an uncle of the Hunter brothers and contains the dates of births in the family. In it John Hunter is stated to have been born on February 9, 1728, which is the date given also in the Hunter Family Bible.

Francis R. Packard.

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[1] Dr. Peachey's address was published in the *Medical Press and Circular,* March 14, 21 and 28, 1928, and has been republished in pamphlet form by Balliere, Tindall and Cox, London.

BOOK REVIEWS

Medical and Allied Topics in Latin Poetry. By Heinrich Oppenheimer, D. Litt., L.L.D., PH.D. (Lond.), M.D. (Heidelberg), M.R.C.P. (Lond.), of the Middle Temple, Barrister-in-Law. London, John Bale, Sons & Danielsson, Ltd., 1928.

This is a most curious and valuable anthology which covers very thoroughly a large field of great interest. We are sorry that the Author has seen fit to begin his preface with the statement that "this volume forms part of the war work of an enemy alien. The innocent victim of social and—*horrible dictu*—to some extent of professional ostracism, the Author sought and found comfort in the company of those long-departed friends, the classical writers." Such a declaration seems uncalled for although we are glad to welcome the result of his efforts to console himself. Dr. Oppenheimer has compiled a great number of quotations from the Latin poets dealing with every phrase of medicine and its followers. The quotations are given in the original and a translation placed in a footnote beneath them. Most of the translations are from well-known English versions of the Latin authors. In many instances they are paraphrases rather than literal renderings. Although the Author states that it is not a scientific production nor a serious contribution to Roman medical history we differ from him on the latter point because we feel that it is a most valuable contribution to the history of medicine, particularly in its sociological aspects. We are sure that his expressed wish that some congenial soul will derive pleasure in turning over its pages will be more than gratified. It is a work which offers a very special appeal and we trust will find its way into the hands of every man who is interested in the cultural aspects of medicine.

The first chapter is devoted to the physicians who figure in mythology and among the legendary heroes, Aesculapius and his sons Machaon and Podalirius. The next chapter is very properly termed "the Medical Register of the Poets," giving the names of the various physicians who are mentioned by the poets and references to the poems in which they occur. We regret that the quotations are not given in full as they are in most of the other parts of the book. Most of the references are to Juvenal and Martial and translations of the passages could have been readily supplied. Fortunately in the following "Medical Sociology, Doctor and Patient, Medical Doctrine and Education," the quotations are given in full and this is one of the most delightful sections of the work. Read in its entirety it gives a very complete picture of all the important phases of the relations existing between the ancient physician and his patient. Then follow chapters on Biology, Physiology and Surgery. The latter deals especially, as would be expected, with traumatic surgery, wounds and fractures, but the Author devotes a number of pages to quotations bearing upon the subject of castration, which as he remarks "absolutely dominates the field of operative surgery in the Roman poets." Diseases of the eye, and of the ear, nose and throat occupy the next two chapters which are followed by a valuable chapter on the infectious diseases as they figure in Latin poetry. Of course, it is difficult to be sure of the real nature of the disease referred to by the poet but Dr. Oppenheimer has elucidated many of the obscure passages with great skill. The same remark applies to Chapter x on internal disorders. Materia medica, dietetics, balneology and hydrotherapy are subjects which the poets refer to in many passages. The ancient materia medica was crude and empiric to the last degree but in matters of diet and in the use of baths and hydrotherapy the Romans were on surer ground and the judgment and knowledge displayed by them is quite remarkable. There was probably no more constant terror present in the mind of the upper classes in ancient times than that of being poisoned, hence the poets are full of references to it and Chapter XIV which deals with toxiology is correspondingly lengthy. Though they enjoyed the liberty of using alcoholic stimulants there is but scanty material in the parts dealing with any medical aspects of alcoholism, although there are innumerable references to the pleasurable and healthful effects of wine. There are chapters which deal with neurology and insanity, the latter occupying quite a good deal of space. As all who are at all familiar with them are aware the ancients poets were not at all squeamish in their references to sexual matters and in consequence the references to such things and to childbearing occupy many, not the least interesting, pages of Dr. Oppenheimer's book. Interesting chapters on monstrosities, dermatology, cosmetics and nursing conclude this most valuable mine of information. A list of the passages quoted and a complete index add greatly to its value.

FRANCIS R. PACKARD.

On May 29, 1929, the Osler Memorial Library at McGill University was formally dedicated in the presence of a large and deeply interested audience. Before the delivery of the addresses messages of greeting were read from the Curators of the Bodleian Library and from the Osler Club of London. Dr. W. W. Francis gave a brief outline of the Library, its contents and purposes. Prof. William S. Thayer of Johns Hopkins University delivered a beautiful address in memory of the donor and Mr. H. S. Osler, K.C., made a short dedicatory speech on behalf of Sir William's family. The Principal of McGill University, Sir Arthur Currie, accepted the gift on behalf of the University after which the audience adjourned to the Library to see the books now at length arranged in their final resting place. Many of the chief treasures were arranged in cases with suitable descriptive labels. Copies of the Bibliotheca Osleriana, just off the press, were also placed around the room and the guests were able to see for themselves the noble volume which has been so skilfully compiled by Dr. Francis. In an adjoining room there were displayed a number of pathological specimens from Osler's collection, many bearing his own inscriptions.

The simplicity of the ceremonies added very greatly to the impressiveness of the occasion. Many of those present were relatives, personal friends or former colleagues of Sir William's and a deep undercurrent of warm affection pervaded the audience. It seemed like the final farewell, cheered by the knowledge that this generous gift to his Alma Mater was the most suitable way in which his memory could be perpetuated and would certainly have had the greatest appeal to him.

FRANCIS R. PACKARD, M.D.

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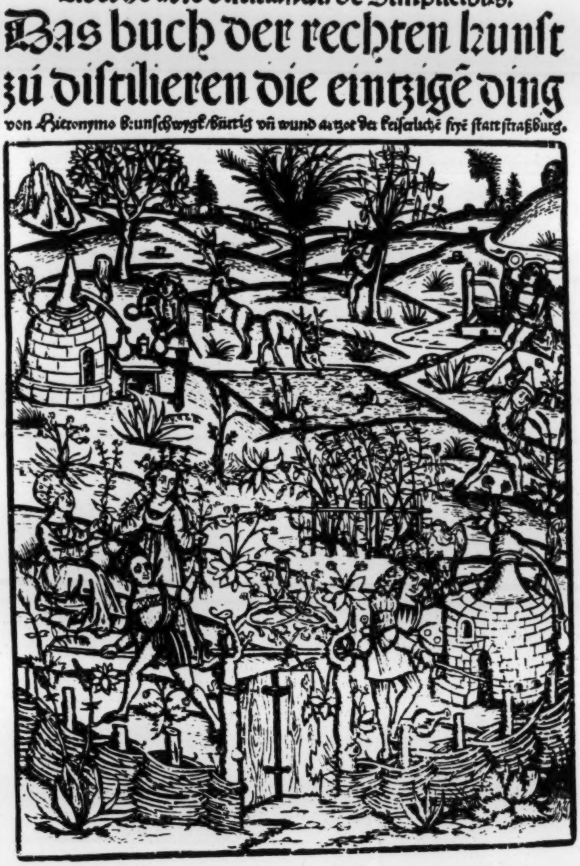

Liber de arte diſtillandi. de Simplicibus.
Das buch der rechten kunſt
zů diſtilieren die eintzigē ding
von Hieronymo Brunſchwygk/bürtig vñ wund artzot der keiſerlichē fryē ſtatt ſtraßburg.

TITLE PAGE FROM BRUNSCHWIG'S "DE SIMPLICIBUS"